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EDITORIAL—SOME HIGHLIGHTS

I. General Economic Scene

State:

Fifth Plan and Perspective Plan : The first draft of the State's Fifth Plan is being finalised by the end of January. The appraisal of the performance of the State's Fourth Plan points to the achievement of self sufficiency in the production of food-grains from 50 lakh tonnes to 70 lakh tonnes, the diversification of manufactures with good performance in cement, rubber goods, sugar and engineering goods, the near completion of the electrification of the State's 14,124 villages and a rapid increase in education and health service. Against the 7 objectives of the perspective plan which are also the objectives set forth for the Fifth Plan (see Vol. II No. 6 pages 1 and 2 and No. 12 page 8 of the Bulletin), the constraints faced in the Fourth Plan are noted. They include low purchasing power of the majority of the people, unbalanced spatial development, heavy reliance on a limited number of food and cash crops, a near exhaustion of surface water resources, serious and widening shortfalls in our power supply, an irrelevant educational system, a run away population growth and an undecentralised administrative system not geared to effective plan administration and execution. Against this background, the Fifth Plan proposals aim at increasing the purchasing power of the poor majority through employment generating programmes in agriculture, animal husbandry and fisheries, small and cottage industry and rural public works setting up a distribution network that would bring essential goods within their range, and intensifying investment in power generation and communications. The total outlay of the Plan is Rs. 3,100 crores but as stated in the last issue (page 6) the State sector outlay as well as the allocations to the 6 main areas plus miscellaneous under the State sector and "Central sponsored" sector have been under further study taking into account (a) the various alternative assumptions of additional resource mobilisation (b) the objectives and strategy (c) the district plans (d) the State policy of not increasing the "Central sponsored" sector and (e) the capital output ratio of the different areas. Additional resource mobilisation for the Fourth Plan has been around Rs. 150 crores and the commission noting that the excise windfall of the current Plan will not be available in the Fifth Plan, has under consideration whether the additional resources to be mobilised during the Fifth Plan could be estimated at Rs. 200 crores. The objectives and strategy lead to heavy emphasis on employment generating programmes and power. The last district plans have been received at the end of January and their analysis is still under way and not really reflected in the Fifth Plan draft. The policy on the "Central sector" can become a bottleneck given the predilections of the Union Planning Commission and Ministries to increase this area and the State policy to work for its diminution. The capital output ratio for Tamil Nadu in the Fourth Plan has been 2.9 overall, with that of agriculture being 1.87, animal husbandry, fisheries and forestry 1.46, small enterprises 0.80, and

other services 2.63. It will be noted that these last four are in the State sector, giving a combined State ratio of 1.94. These ratios must be taken into account in computing the average 7.6 per cent growth rate. The result at this stage of plan formulation is likely to be a State sector outlay of Rs. 1,300 crores, a Central sector outlay of Rs. 1,000 crores (including around Rs. 300 crores in the "Central sponsored" sector) and Rs. 800 crores in the private sector.

Annual Plan for last year of Fourth Plan: The approved annual plan for 1973-74 which is the last year of the Fourth Plan will be Rs. 120 crores, of which Union assistance will be Rs. 46 crores. The State's total Fourth Plan will then amount to Rs. 535 crores, against the Rs. 624 crores proposed in the State's draft Fourth Plan and Rs. 519 crores approved at the start of the Plan by the Union Planning Commission. The five approved annual Plans for the State's Fourth Plan amount to: first year 1969-70 Rs. 87.5 crores, second year 1970-71 Rs. 97.5 crores, third year 1971-72 Rs. 112.37 crores, fourth year 1972-73 Rs. 116.35 crores (see Vol. II No. 2 page 4 of the Bulletin) and now for the fifth year 1973-74 Rs. 120 crores. The priority programmes in the 1973-74 plan are power generation for which over 1/6th of the plan outlay (Rs. 22 crores) is allocated, irrigation, agricultural production, and water supply and drainage. The full picture for 1973-74 will emerge when the annual budget is presented because the total developmental expenditure of the State is three to four times that of the Plan expenditure. In approving the 1973-74 annual Plan, the Union Planning Commission's comments are of interest. The State's success in raising additional resources during the current year, the prospect of achieving the State's agricultural target particularly in HYV areas, the setback in achieving the power generation target due to Ennore, and the need to cut back on buildings and roads to increase the investment in the productive sectors are noted. The Union Planning Commission has promised to give support to the completion of irrigation projects, improve power generation and increase fertiliser supply for the rabi crop. This is the feasible arrangement for next year within the existing framework of Union-State relations. The Fifth Plan formulation by the State Planning Commission and the negotiations during January 10 and 11 with the Sixth Finance Commission will, it is hoped, help in establishing a more rational and viable basis for the annual plans of the State during the Fifth Plan. More generally the Reserve Bank's review of State finances for 1972-73 is a useful pointer for such improved planning. One result of the decision to discontinue State overdrafts for 1972-73 (see Vol. II No. 3 page 5), has made for financial discipline in some States and resulted in raising an additional Rs. 68.8 crores for the current year, which next year will increase to Rs. 81.8 crores. In 1971-72, State receipts had increased by 13.4 per cent but expenditures increased by 14.5 per cent, so that the deficit for all States stood at Rs. 246 crores. In 1972-73, revenues are rising by 3.2 per cent and expenditures by 0.9 per cent, reducing the total deficit to Rs. 107 crores, which is likely to be wiped out by additional resources mobilisation by both the State and Union Governments. But the present system of continued dependence on the Union Government for project approval and for finances does not make for effective and dynamic planning. The shares of the major areas—roads, agriculture, multi purpose river valley schemes, education, etc.—continue in the same traditional mould, with no incentive at innovation and redeployment. Some reduction (3.5 per cent) in non-development expenditure

which continues at a high 37.2 in most States and larger provision (by Rs. 55 crores) for debt reduction are noted. There is still no incentive in all States to raise the maximum additional resources. *For the Fourth Plan*, out of Rs. 1,098 crores to be raised, Rs. 930 crores have been raised in the first four years. This State will raise much more than its target but there are others who rely on Union handouts. If the Planning procedures enabled each State to plan in relation to its potential and constraints, raise its resources including sharing equitably in the expanding sources of Union taxes, allowing for full compensation for backward areas, then States will make their public undertakings, like irrigation, electricity and multi purpose valley schemes pay their way.

Supplementary demand: The December session of the legislature approved the second supplementary demand for 1972-73 for Rs. 4.72 crores, of which Rs. 3.95 crores are in the Revenue account and the balance in the capital account. The demand made provision inter alia for (a) Rs. 2.82 crores towards centrally sponsored and central sector schemes (b) Rs. 25 lakhs for deepening wells where there is acute drinking water scarcity (c) Rs. 1 crore in anticipation of Union Government's approval for minor irrigation works (d) Rs. 50 lakhs towards the Rs. 1 crore which the pay revisions of the one man committee will cost (e) Rs. 45.76 lakhs for employment of 900 unemployed BT teachers (f) Rs. 28.30 lakhs for technicians employment to be referred to later (g) Rs. 21 lakhs as the first instalment for the slum clearance board's basic amenities programme (h) Rs. 31.06 lakhs for the sunflower development scheme and plant protection of 1 lakh acres (i) Rs. 3 lakhs for the class I-VI student health scheme in some Madras schools (see Vol. II No. 6 page 39 and No. 10 page 30) (j) Rs. 20 lakhs as share capital of the Tamil Nadu Handloom Weavers Cooperative Society (k) Rs 25 lakhs for the water supply and drainage board and (l) Rs. 42.5 lakhs for modernisation of the police force. All these items are part of the programmes now operating or recently launched and they now have the needed financial cover.

Flood and their Aftermath: After nearly half a century, the State was hit by a cyclonic storm with continuous and heavy rains between December 5 to 10, 1972 as a result of which Rs. 40 crores worth of damage to houses, irrigation works, agricultural lands, cattle and roads have been suffered within these 5 days. The most seriously affected districts were South Arcot, Thanjavur, Salem and Coimbatore followed by Chingleput, North Arcot, Dharmapuri and Tiruchirapalli. Fortunately due to quick emergency safety action taken by the Government, loss of human lives was limited to 80 including 10 workers who were buried in the Nilgiris land slip. Rs. 7 crores worth of standing crops (25,700 acres of paddy, 1,500 acres of sugarcane, 2,800 acres of tobacco, 6,000 acres of cholam, 1,000 acres of bananas, and 300 acres of betel vines) were washed away. The heaviest crop losses were 83,450 acres in Thanjavur and 88,000 acres in South Arcot. It is important that bull dozers and other mechanical devices be used to remove quickly the silt and restore the lands including the 76,800 acres partially damaged in other districts. This should be undertaken directly by the PWD and Agricultural Departments rather than through the grant of cash subsidies to the farmers, which will not meet the needs either in space or time. Over five lakh people have been rendered homeless with the washing away of 1.7 lakh houses. In Salem 2,500 houses were damaged, in Athoor 1,000 houses, in South Arcot 1,069 villages out of 2,287 were submerged and all villages on both banks of the Vashista,

Pennaiyar, Godilam, Pennar, Vellar, Gomukhi and Bhavani were washed out together with the hutments on the sea coast. In addition to the immediate cash relief of Rs. 80 each for 1.7 lakh persons to enable them to erect quickly shelters, this is an opportunity to build pucca houses for this group living in the poverty sector—both in the coastal and riverine areas. The finance for this housing programme could be provided by raising loans from the banks and L.I.C. and through diverting some resources from the existing housing board programme. The irrigation damage has been extensive. 1,387 minor irrigation tanks and 1,624 PWD tanks were breached and seven small dams were broken. Damage to wells and loss of pumpsets have been extensive. Here the repairs to the irrigation works and channels and the strengthening of flood banks should be undertaken on the basis of a careful expert appraisal to ensure permanent and technically sound protection. The medium term loan aid announced by the government should restore the damaged wells and lost pumpsets. The damage to roads and railways was serious both in its immediate effect of isolating these areas for a few weeks and in its extent. The highways were breached in 1,445 places and the panchayat, municipal and corporation roads suffered breaches in over 4,000 places. The railway between Madras and Tiruchirapalli and the chord line were washed out in several places and for a week there was no through railway traffic. The three special divisional engineers who have been posted to South Arcot, Salem and Cuddalore districts for expediting the repair of roads should operate under flexible procedures with considerable decentralised responsibility. This damage from the flood in the State occurred even as the emergency measures to the tune of Rs. 6 crores was being taken by the government in relation to the drought hit areas as reported in Vol. II No. 12 (pages 6 and 7) of the Bulletin and a Union Government team was discussing with the State authorities the long term measures against drought—particularly through intensified dry farming teachniques—that should be taken in areas like Dharmapuri. The flood damage is a further interruption in the development programme of the State. The immediate relief in cash grants for housing, repairs to PWD tanks, minor irrigation tanks, highways and roads of Rs. 4 crore covers about one tenth of the needs. In addition takkavi loans to the ryots who have lost their cattle (about 3,000 cattle were lost), remission of land revenue and all cesses for the current year for the affected areas and grants ranging from Rs. 500 to Rs. 2,000 to the bereaved families have been arranged. This is an occasion when the people and voluntary agencies including colleges and universities should be mobilised to participate in the relief effort. The Union Government has also a major relief role to help in this tragedy and its team has been visiting and assessing the damaged areas. An important and long term plan should be devised with the necessary technical help by the committee set up and chaired by the Chief Minister to take anti-flood action, particularly with regard to the river and irrigation works, large and small dams to provide against future occurrences like this.

Power: The power situation in the State and the Country continues to be grim (see the last 3 issues of the Bulletin Vol. II No. 11 page 5, No. 12 pp. 3-6, Vol. III No. 1 pp. 6-8). All the States, particularly the industrially advanced ones—Maharashtra, Gujarat, Tamil Nadu, Punjab as well as UP and West Bengal—have heavy power cuts in operation. These represent power shortages ranging from 10-40 per cent of the requirements. The Union Government now admits that we

will be ending the Fourth Plan with a total shortfall of 3 million KW against the target of 23 million KW. This situation as has been pointed out in earlier issues is due to faulty perspective planning, poor execution of approved projects in both constructing the civil works needed for the power projects and the lack of adequate timing in ordering the generating equipment and delay in its receipt and setting up. Apart from the immediate emergency actions being taken to improve a little the present crisis situation through speeding the civil and construction works, running existing thermal stations to full capacity (vide Neyveli and Ennore), setting up State implementation cells to cover this emergency programme, developing regional power grids, another major issue must be faced and resolved. And that is the question of import of 220 KW generators which are readily available and available at lower prices than the locally produced ones. The need for installing generators quickly to meet the current shortages which are seriously hampering our industries has been fully dealt with in past issues. The latest to that score is our Aluminium industry which has increased its capacity during last year by over 35,000 tonnes to 2.02 lakh tonnes. This is important as aluminium is in great demand and could be a heavy drain on our foreign exchange resources, if imported. Because of the power cuts in Tamil Nadu, Mysore and Uttar Pradesh where the major units are located, the production of this key metal is not likely to reach 1.7 lakh tonnes this year. As a power intensive industry, the cost of power as well as its availability is crucial. An additional one paise per KW results in increased cost of Rs. 240 per tonne. Indian aluminium in this State has been pleading for some rationalisation of the power structure. The Hindustan Aluminium Corporation in UP needs a generating set of 150 to 200 MW to use its capacity and because of the time factor and price differential applied for permission to import the set which has been refused. In turn it has declined to place the order with BHEL. The State Electricity Boards are also increasingly turning to foreign manufacturers for importing generating sets. The latest such action is the Maharashtra State Electricity Board which is importing 130 KWA transformers for Koradi and Kalwa for the 400 KV Koradi-Bhuswalkalwa line to be commissioned next year. The import is being arranged directly without using BHEL or HEIL. Another urgent problem area is the captive power plants that the government has been forced to permit to private sector projects which are power intensive and large scale,—with the requirement that the sets should be ordered from the indigenous public set manufacturers—BHEL or HEIL. Further the proposal to use floating power stations to act as a kind of first aid ambulance service to meet severe power shortages in coastal towns and cities faces the same problem. The pros and cons of relying on indigenous production (BHEL and HEIL) and importing the sets are clear. The two public sector firms require a long time period—from 2-4 years—to deliver the set while the foreign firms can take it off their shelves and deliver it within 2 years. The capacity of BHEL and HEIL are limited. If they are to produce generators for the additional 20 million KW planned for the Fifth Plan, they will have to produce generating sets at the rate of 4 million KW per year, against their having so far produced sets for 1 million KW during their entire life time. Against 133 generating sets for which they have accepted orders, only 26 have been delivered. This is the main reason why the Power Ministry is firmly against relying solely on indigenous production. On the other hand the foreign firms present attractive offers. US, Western Europe, as well as East European countries are now producing 500 MW sets, so

that they are ready to sell off their 220 MW sets, which have become surplus and for them dated, at low prices with speedy delivery. The price is thus another factor, which with the excise duty, make it double the price of imported sets. On the other hand BHEL and HEIL must be used effectively and must be helped to develop the design and technology for the manufacture of 500 MW thermal generating sets. As pointed out in Vol. II No. 4 page 17 and No. 10 page 21, BHEL and HEIL have a well equipped research and development structure with highly skilled engineers and managers which can develop the necessary technology. Further the statistics of delivery of sets against orders accepted are misleading. The two units are occupied at least for an equal amount of time in repairing and maintaining the imported sets, because such repair and maintenance by the foreign supplying firm are either unavailable or prohibitively expensive. BHEL, for instance, had to do stress relieving and non-destructive testing of a wheel at both the Basin Bridge thermal and Kodayar hydro power stations for which the supplying US firm asked a fee of $40,000. BHEL also did the repair for a turbine and the runner for a Yugoslav set within a month, for which the Yugoslav suppliers requested 6 months. Similar repair services have been rendered by the two units to the Soviet set in Kobra and Nangal power stations. All this points to the need for using the two units in negotiating the import of sets together with their servicing. The two units have also arranged to produce sets for one million KW annually and this could be increased gradually to 2 million KW by the end of the Fifth Plan, together with the pricing being internationally competitive. All this means that the power crisis which will be with us through the Fifth Plan demands that there is no either (all indigenous manufactures) or (all foreign imports of generating sets) as the answer. The Union Planning Commission and the Union Ministry of Industrial development which take the former position and the Ministry of Power and Irrigation which takes the latter must both modify their positions. Even if BHEL and HEIL produce annually sets for 1 million KW moving to 2 million KW, if the Fifth Plan needs are to be met (4 million KW annually), there must be some imports. What is needed is the committee as demanded by the State Boards, consisting of the State Board Chairman, and the Union Ministries of Planning, Industrial Development and Power and Irrigation to establish and execute a policy for (a) speedy and full use of the capacity of BHEL and HEIL (b) import of sets through BHEL and HEIL for meeting urgent and additional demands (c) fixing viable prices and time delivery schedules (d) completion of civil works by the Boards on time so that the delivered sets are not lying unopened, as in West Bengal and (e) adequate financing of the whole programme, particularly of the State Boards which are now forced to use their inadequate resources on civil works and thus delay the first and second payments to the producing units. It is on the success of developing and executing such a policy that the resolution of the serious power crisis in the State and Country depends.

The State power position is being reviewed in January to determine whether a further cut over the current 25 per cent will be necessary. The December rains made the working of the Neyveli installations more difficult. As suggested in the last issue of the Bulletin (page 7) as from 30 October, 1972 the briquette and the carbonisation plant has been closed down due to the non-availability of lignite. The 1,860 workers attached to the Plant have been idle with alternative work being sought for them. The rains resulted in flooding the mines which at mid December

had 30 feet of water, a complete shut down of thermal station being just averted. The lignite mine has been producing 5,500 tonnes per day, of which 4,300 tonnes are fed into the 600 MW power plant, generating 130 MW out of which 100 MW are fed into the grid, (an improvement over the last report in the last issue). The remaining 1,200 tonnes are used by the fertiliser and process steam plants. Both the short term (oil firing of two sets) and the long term (the second mine cut) proposals are still under study by the Union Government and no action to relieve the serious deficit before the next North East monsoon seems likely. This is serious for the industries—large, medium and small,—the workers and consumption patterns in the State. The action which the State can take to alleviate the situation through the Ennore Station and reducing transmission losses, must be acted upon. Also advance action for the Fifth Plan through expediting the commissioning of power stations under construction (see Vol. II No. 10 page 6 and No. 12 page 5), running Ennore and Neyveli to as near capacity as possible and developing the regional and international power grid should be taken in hand. Under the expediting programme, Kalpakkam should be completed in both units and their use for the State settled. At present there is agreement between the Union and State Governments that the entire output of the first unit will be fed into the State grid. On the second unit, the Union Government wants 50 per cent to be fed into the Southern grid, while the State wishes the entire output to meet the local shortfall. This should be decided. Kerala is now supplying power to this State at the rate of 1 million units a day up to a ceiling of 150 million units. As at December 31, 100 million units had been used up and there is need for a further supply from Kerala. In fact, it is in this State's power interest to push hydro power development in Kerala as vigorously as that for this State. The third stage of Idikki will add 55 MW to the power supply and even so only 40 per cent of Kerala's power potential will have been harnessed. The extension and strengthening of the Southern grid, with particular reference to the Mysore and Kerala power potential should be pursued. Another prospect opening up is the international grid with Sri Lanka whose power needs and resources are complementary to those of this State. Feasibility studies are under way to link the power grids of Tamil Nadu and Sri Lanka which are separted by only 12 miles of sea. The river waters flow in Sri Lanka in July to October is low while our rivers here at that time are in spate due to the monsoon. It would be possible for the Southern grid to supply power to Sri Lanka then. Conversely, the Sri Lanka rivers run full in April to June, during our dry season, when Sri Lanka can feed our grid. Once agreement is reached on the ceiling for exchanges and, their engineers trained in the building of barrages, dams and tunnels in which the South has the necessary expertise, the link will call for a submarine cable, an A.C. sub station, a convertor-inventor station and terminal D.C. cables. It is with these Fifth Plan prospects that the State's rural electrification programme is being completed. In mid December the Mayuram block in Thanjavur district was electrified covering 209 villages, which can during the next Plan period energise 1,300 pumpsets, supply power to 68 small scale and agro-industries, and provide 600 street lights and 3,110 domestic and commercial connections. The State Electricity Board must continue carefully planning the supply and generating position to meet these growing needs.

Land reform, agricultural income tax and urban land tax legislation: The December session of the legislature has further tightened the agrarian reform legislation in

the State though several bills were adopted. Under the Tamil Nadu *Land Reforms* (Fixation of ceiling of land) Sixth Amendment Bill 1972, all land partitions that have been made to evade the ceiling have been nullified. (In one State the rate of benami divorces have increased by over 1,000 per cent in anticipation of the ceiling legislation). *All such transfers and partitions* after the Act now revert to the State, with no compensation, but with a penalty for showing such transfers and partitions. The Public Trusts (Regulation of Administration of Agricultural lands) Amendment Bill authorises the government to lease out the lands to *the cultivating tenant* where it was not legally leased or was a benami lease, and also to take over the tenant's land in excess of the ceiling. The third Bill, the Levy of Ryotwari Assessment on Freehold Land Bill, abolishes freehold lands going back *to 1859*, when on payment *of 20 times of the annual land* revenue assessment, they were perpetually exempted from all future levies. These lands have now been brought under the normal ryotwari pattern of annual taxation with cess. These three Acts are part of the continuing process of ensuring effective implementation of the ceiling legislation and equitable land taxation. On this the Agricultural Income Tax (Amendment) Bill, which turns into legislation the ordinance reported in the last issue of the Bulletin (page 9) raises the exemption limit *for the tax from 7.5 to 10 standard acres* together with the concession on conversion to standard acres for seven commercial crops and the compounding facility referred to in the last issue. When the States review the Agricultural Holding Tax proposal and decide on its adoption, this legislation will need to be replaced by the provisions in the agreed proposal. Another tax law, the Tamil Nadu Urban Land Tax (Amendment Bill) raises the urban land tax exemption limit from one to two grounds and increases the tax rebate on the land above 2 grounds from 25 to 50 *per cent when the building* is owner occupied. Finally the Indian Stamp (Tamil Nadu Amendment) Bill enables the government to recover the stamp duty evaded in a variety of ways.

Urban development: The Water and *Sewage Purification Committee* whose report on air pollution (See Vol. II No. 3 page 17, No. 4 page 25 and No. 6 pages 6 and 15) is partly under study by the government and partly given effect to, has resulted in action to restrain noxious gases emitted by vehicles. In the first six months *of 1972, 4,584 vehicle* owners were prosecuted and fined Rs. 12,500. The State Transport buses are being fitted with the filters to reduce their gas outturn. The government has now reconstituted that committee with responsibility to look after all pollution. One action that can be *taken now by the committee is ensure* adequate disposal of effluents before industrial licenses are issued. To ensure the orderly development of the Madras Metropolitan Plan (1971-1991) referred to in Vol. I No. 8 page 9, Vol. II No. 7 page 3, No. 9 page 7 and No. 10 page 7, the *government* has set up a 17 member Madras Development Authority with the Minister of Town Planning as chairman, the Minister of Local Administration as vice chairman and a member secretary, who has been specially trained for this programme. This should ensure the planned *development of the city in accordance* with its growing needs. The slum improvement programme of the city has received a Union Government grant of Rs. 19 lakhs (out of an All India total of Rs. 1.78 crores) for the improvement of nine city slums. This is an environmental improvement programme which is as needed as the building of tenements. The government has also decided to grant pattas for occupants of house sites (who have encroached on government land) in

consultation with the Slum Clearance Board. Such pattas will be 705 sq. ft. in the city, 3 cents outside and will cover the city and its belt areas provided they do not conflict with the Metropolitan Development plan and the owner does not alienate the site. Similar arrangements are made for the grant of pattas to small and poor house site owners in Madurai, Tiruchi and *Coimbatore. In Madras alone some 50,000* Harijan and poor families will benefit from this programme. A further development programme is the use of pre-fabrication housing methods in the State. This will strengthen and expand the State Housing Board programme. The Hindustan Housing Factory is making a feasibility study on setting up a prefab factory in the State.

Rural Development : The Planning and execution of the State Plan in the rural areas will be improved and strengthened with the decision to create and upgrade categories of development officers at the District, Taluk, Block and village levels. Each development district will have a District Development Officer, each division a Divisional Development Officer, and an upgraded Block development officer for each Block, who will under the direction of the District Collector be responsible for plan administration and project execution. It is now necessary to revise the procedural relations between the technical departments at the State level and the district, division and block level planning and execution. The 30,000 officers and staff of the rural development programme would then form an effective means of ensuring participation of the rural people in planning and even more in execution of their development programmes. Further to the extension of its programme to adopt areas in order to improve and expand their agricultural produce, reported in Vol. II No. 10 page 6, the Indian Overseas Bank adopted four more villages Chunampet, Kavanur, Manapakkam and Illedu in the Chingleput district to aid 80 small and marginal farmers. The loan assistance to them will be for fertilisers and pesticides purchases and for poultry and dairy farming and sheep breeding. A further action in rural development is the recommendation of the State Backward Classes Advisory Committee to extend its services to a backward community in Kanyakumari district, to develop special training facilities for backward classes in goldsmithy, chartered accountancy and company secretaryship. The government also is negotiating with banks for loans for petty traders from this group and is setting aside 5 per cent of developed plots for housing for barbers and washermen. The Fifth Plan should register a greater measure of equalisation in the development of this group.

Transport : Further to the inter-State transport agreements among the Southern States discussed in Vol. II No. 8 page 2, the first conference of Transport Ministers of the Southern States in December made decisions which will increase trade and movement of goods between the States and promote tourism. All inter State routes in the Southern region will during the Fifth Plan become national highways with streamlining and merging of vehicles and passenger taxes, uniformity in load requirements of goods vehicles and parity of service mileage under a single point system. This will result in the free and smooth flow of traffic, including tourist vehicles which will operate in all the States. The conference also set up a standing committee of Transport Commissioners of the Southern States who will implement the conference decisions, act as a clearing house on transport matters and study and recommend to the Ministers conference action on revision of the motor Vehicles Act, a *common highway traffic*

code and a training, research and development institute for transport officers and technicians of the Southern region. The conference has made an important recommendation to the Union Government to consider all cities with a population of over 10 lakhs as metropolitan areas, which will give Madras, Bangalore and Hyderabad a sizeable rebate on the excise duty on diesel oil. In the State a fifth Transport Corporation—the Anna Transport Corporation has been formed to cover the districts of Salem, Dharmapuri and North Arcot. It operates the nationalised bus routes in these three districts. This addition to the Chera, Chola, Pallava and Pandya transport Corporation, imposes a heavy burden on the State in gearing its technical services to operate such a vast and vital system as pointed out in Vol. II No. 12 page 7 of the Bulletin. For this reason the training and development transport institute recommended should become an operating agency at an early date.

Area Studies: There is a growing and valuable documentation in the State on area planning and studies. For each district there are at least four types of such area plans—the district plan organised by the State Planning Commission, the Regional Plan organised by the Department of town and country planning, the lead bank survey and techno-economic studies undertaken by ITES, Madras, IIPOR Delhi, FIDO Trivandrum, a consortium of IDBI, ICIC and IFC. The district Plan should pull together all this important and valuable analysis and recommendations and present an integrated district picture. The Planning Commission should ensure that the District Planning cells are associated with all these studies and that its library has the final reports. The timing problem is not serious, because though all these studies are going on simultaneously with varying time schedules, and the district plans have been drafted by the end of December, they can be revised and updated in light of the other studies as and when they are completed. The SIET Institute (Hyderabad) study on Thanjavur district which was recently completed falls into this pattern. While the district plan for the district has taken into account the conclusions of this study, it will need revision in light of the recommendations that will emanate from the studies by FIDO and the lead banks in that district. The SIET study conclusion is that the good development status of the district can be further enhanced and accelerated by promoting structural changes in sectoral distribution of capital and man power resources, and development of a market and communication infrastructure. The district has a solid but one sided basis for its development. It is the most advanced in the production of paddy—producing 20 lakh tonnes per annum out of the State's total of 54 lakh tonnes, with sizeable contribution in sugarcane, coconuts, bananas and groundnuts. This is due to its high irrigation area (65 per cent of cultivated area), over 90 per cent being canal irrigation. The fastest response to HYVs has been there. But out of the annual district income of Rs. 248 crores, Rs. 300 crores is contributed by the agricultural sector. One result of this imbalance is the growing unemployment in the district and migration out. The SIET study therefore is aimed at diversifying the economy through the development of full fledged agro-based industries, coir, fisheries, livestock, marine, and promotion of further secondary industries with a local raw material and manpower base—modernised sheller process rice mills, extract units from ricebran, straw board units from paddy straw, coconut and banana based units, plus pesticide and agro service units. The capital needed for this diversification is only around 4 per cent of the district in-

come. The development of roads, markets around the existing towns like Thanjavur, mayuram, etc. of the first order and the second line ones like Pattukottai, Vedaranyam, etc. would both help them to develop as growth centres with markets for meeting the growing demand for consumer durables like transistors, bicycles, etc. and non-desirables like soap, oils, etc. and become themselves service centres for the widely diffused agro industrial and industrial structural transformation in the offing. The study has valuable insights. It has the usual limitations of a rather quick study and some of its assumptions and data need to be corrected. But this is the task of the District Planning cell and that has been done. The study's major thrust—that the district is poised for a structural transformation which planning should now facilitate—is sound and is also the message of the district plan.

National

Fifth Plan : The approach paper has been approved by the Union Government with some modifications from the document established by the Union Planning Commission (see Vol.II No. 12 page 8 of the Bulletin). The economic ministries took the opportunity of the cabinet level discussion to propose changes, both in the approach and sector allocations. But the major improvement in the approach paper will, it is hoped, be a clearer statement of the policy framework which is the area which should be debated at the late January meeting of the National Development Council. This is also the area where discussion should be concentrated in Parliament, in the State planning bodies, and in the district and block level planning agencies. What should be clearly visualised is the pattern of consumption proposed and the consequent production pattern that is called for in the Fifth Plan. It should be possible then to pass beyond the generalities of the 5.5 per cent growth rate and the raising of the levels of consumption of the 30 per cent of the poverty sector, to agree on a policy frame for production, consumption, savings, investment and employment generation.

Prices : The official wholesale price index for the week ending November 18, 1972 registered a slight decline to 210.1, as compared to the index of 210.9 at October 21 reported in the last issue of the Bulletin (page 11). Though the price rise for the year was a high 11.9 per cent, the trend to stabilisation at this high level was marked. Rice prices declined marginally by 0.2 per cent over the reporting week but wheat went up by 1 per cent. The prices of sugar, cement and cotton declined, while for fuel, power and light, there were no price changes. The measures to damp down the price rise outlined in the last three issues of the Bulletin are now beginning to show results, particularly in the case of foodgrains, sugar and cotton where government intervention, the release of stocks, imports of foodgrains and edible oil and better wagon supply and transport facilities have prevented the continuation of rhythm of price rises experienced during the year. The monetary and fiscal causes of the price inflation however continue unchanged. Deficit financing and increase in money supply take many forms. The most obvious is the Union and State Governments' overdrafts with the Reserve Bank. Here the amount is known and the only question is whether such overdrafts should be subject to some kind of public scrutiny and accounting. But the other more insidious form of inflationary financing is the subscription of government loans by the Reserve Bank, its affiliates and the nationalised banks. There is here no difference between a straight overdraft to the government by the Reserve Bank and the subscription by the banks to govern-

ment loans and their increasing investment in government securities and bonds. Both have the same inflationary effect as they increase the total amount of money in circulation when paid out for various non-plan and administrative expenditures, without an increase in goods and services produced or without a decrease in consumption. For the week ending November 24, the deposits of scheduled banks have passed the Rs. 8,000 crore level and with little expansion of credit to the productive sectors, the banks are increasing their purchases of government securities and bonds of various kinds. A recent suggestion to promote public debate and some kind of public accounting of the roles of the government and Reserve Bank in the various forms of deficit financing is for a commission of enquiry to examine this problem. The form suggested—an enquiry—is not a happy one but some kind of public expert committee which might work with the government and Reserve Bank authorities to define clearly the issues involved in the various forms of deficit financing and propose a code of conduct for both parties with a view to keeping such financing under the normal norms and options for a fast developing country like ours is necessary.

Grain Trade takeover: A further measure to damp down prices and even more to make available foodgrains at prices that the poverty sector can pay, is the decision for the State Governments to take over wholesale trade in foodgrains. The mid December meeting of the State Food Ministers accepted the principle of takeover and set up a committee of deficit and surplus States, the Union planning commission and the Union economic ministers to work out by the end of January a practical programme. First there is the question of procurement of the marketable surplus. To date the private wholesaler is quicker, more flexible and more effective in getting at the marketable surplus than the Union of State procurement agencies, which are dealing with public money and have to operate by certain procedures. Hence the takeover of the wholesale trade must be preceded by strengthening and streamlining the procedures of the procuring agencies, particularly in relation to the problems they face as discussed under the agricultural development sector of the last issue (pages 26-30). Secondly the storage capacity of the procuring agencies in the States must be rapidly increased if the entire surplus is to be acquired by the State agencies. This involves improved storage technology as well as drying and preservation facilities. Third the distribution system will have to be worked out. At present there are several lakhs of retailers who will have to be served plus the fair price shops which have been increased in the last six months from 1.25 lakhs to 1.61 lakhs and which will have to be increased further. Fourth the whole operation will require heavy finance, the government having to take over the financing now being done by the wholesaler. This should not be simply another deficit financing operation. The surplus resources that will be in the hands of the wholesalers should be attracted in the from of savings and bonds of various kinds to finance production activity. Finally there is the question of the large number of those engaged in whole trade, numbering 40 or 45 lakhs, who will have to be helped to develop alternative productive activities and employment. The committee's proposals are thus a key element in working the accepted principle for taking over the wholesale trade. The take over itself should be carefully phased to give the States time to acquire the experience and expertise and to cause the least disruption in distribution efficiency. Wheat can be taken over as it comes to the market at the end of the rabi season in April and rice at

the next season. The first step will be effective procurement. On this the kharif experience is not a happy one. Against the procurement target of 4.5 million tonnes, the State Governments have indicated that they can procure only 3.5 million tonnes and have actually purchased only 9 lakh tonnes by early December. A second consideration to be borne in mind is that we cannot afford to fail on this kingpin to the distribution network promised for the Fifth Plan, when the network will have to supply through approved retail outlets, pulses, edible oil, sugar, standard cloth in which also there will have to be intervention at the wholesale level. Meanwhile the foodgrain supply position for this year is somewhat eased by the import of 1.5 million tonnes of wheat which has begun arriving every week from January. The wheat imports are from US, Canada, and Argentina. Part of the imports of 1,00,000 tonnes of oil seeds and oils have also arrived. The total cost of these food imports is Rs. 89 crores. The latest official statistics show a decline in food production over the last 3 years. The bumper year was 1970-71 when the revised estimate is not 107.8 million tonnes but 108.4 million tonnes. In 1971-72 the final estimate is 104.6 million tonnes, a decline by 3.8 million tonnes. The government forecast for 1972-73 is 100 million tonnes, the food imports being a means of rebuilding our buffer stocks.

Industrial growth: The hope expressed in the last issue of the Bulletin (page 10) that the 7-8 per cent industrial growth performance of the first quarter would be sustained is realised for the second quarter. During the period January 1 to July 31 industrial growth was up by 6.8 per cent compared to 1.9 per cent for the first seven months of 1971. In fact, up to the end of May the increase was 7.5 per cent compared to the same period in 1971, with relative stagnation in June and July which brings the overall growth down to 6.8. These statistics should of course be interpreted with some caution. 1971 was a poor year for industrial growth—the annual average being 3.1 and the first six month's being 2 per cent. In turn the 1971 poor performance was a reflection of the performance of 1970 (4.6 per cent for the year and 5.5 for the first six months) and even better performance of 1969 (7.4 for the year and 7.8 for the first six months). Also the effects on the index of the system of weightages and those of excluding small industries and the new and sophisticated medium and large scale industries set up in the sixties need to be borne in mind. The first half year's good performance in 1971 is due to the expansion of production in textiles (which has heavy weightage), transport equipment, chemicals, basic metals, and non-electrical machinery. The number of industrial licenses issued up to September 30, 1972 was 318 (317 in 1971 and 240 in 1970), small scale industry registrations (up to Rs. 1 crore) were 507 (376 in 1971 and 169 in 1970), and applications for fuller use of capacity were 223 out of which 144 had been decided. Against these growth indicators, the last five months will begin to show the effects of the negative factor, the cut in power supply, the transport bottleneck and the shortages of coking coal, the latter of which was so serious at the end of the year that Rourkela was left without even a week's supply and faced Bhilai and Bokaro with prospects of very serious cut backs in production. To ensure the minimum growth of this vital sector at 7 to 8 percent, the Union Government must intervene with short term action to relieve the three bottlenecks just mentioned, encourage use of balancing equipment as a means of increasing production and save on our short supply capital, further stream line industrial licensing procedures and do everything possible to ensure capacity utilisation. In this regard

our policies are ambivalent. The large houses which are capable of capacity expansion and production are being restricted in accordance with the intentions of the MRPT Act. In fact the government's end of the year review of the industrial performance makes a long and laboured defence of how it has restricted issue of licenses to larger houses and on capacity utilisation, concludes with the words "this shows that only 35 per cent of the cases of larger houses and foreign concerns have been cleared for utilisation of capacity". The social justice objectives demand enlargement of the public sector and the small industrialist. It also demands restriction of monopolies and expansion of goods which are needed by the poverty sector but which are not in demand in the classical market sense, because that section does not have the purchasing power to demand the goods. The larger houses are not and by definition cannot be expected to go in for these (unprofitable) lines of production. And until production units and lines for turning out the goods needed by the poverty sector are developed and given their due to weightage in the index, the accepted policy will have a slow down effect on industrial growth. This is one of the basic issues that needs to be taken into account. It will also influence foreign private investment which at 31 March 1971 stood at Rs. 1,319.7 crores, while the net investment was a mere Rs. 28.7 crores, indicating its restriction to areas where foreign technology was needed. The recently passed Industrial Finance Corporation (Amendment) Bill and a similar IDBI Bill which enable IFC and IDBI to grant soft loans to new entrepreneurs and industries in backward areas covering industries such as automobile repairs, fishing, etc. and projects like Bureds run by the Bank of India in co-operation with NAYE to train in 3 months young entrepreneurs whose projects are approved and grant them loans upto Rs. 3 lakhs per project for financing an integrated package of inputs, will during the Fifth Plan have some compensating effect on industrial growth. But the short run effects of the controls and restrictive policies should be clearly understood.

National Production

Fertilisers: Fertilisers continue to be in rather severe short supply due to low utilisation of existing capacity of the plants and falling imports due to hardening of supply and prices in the international markets. The low utilisation of existing capacity is resulting in annual loss of Rs. 70 crores. The first priority is thus to produce upto capacity and for this the recommendations of the Action Committee should be put into effect. The other factors inhibiting increased fertiliser production are the power shortage, and equally serious, fluctuating and intermittent power supply, raw materials shortage, labour problems, price stagnation and the problem of the feedstock. The feedstock problem referred to in the last issue of the Bulletin (page 15) is serious and involves choosing between coal and gas on the one hand and petroleum on the other in its various forms of fuel oil, Naphtha and liquid ammonia. The agreement with Kuwait to import 5 lakh tonnes of ammonia and the problem of the high price being demanded by Iran and useful reminders of the problematic nature of this feedstock. The practical alternatives are a combination of coal which is an indigenous source and fuel oil which is an imported one. There is a case for increasing gradual reliance on coal both because of the price factor and in order to reduce dependence on the highly volatile international commodity—petroleum. For the Fifth Plan the picture is grim but clearly established. By 1978-79 we need 9 5 million tonnes of nitrogenous and phosphatic fertilisers against the capacity at that time of 5.6 millions on

present basis. This means that we must now set up 12 nitrogenous plants with a capacity of 900 tonnes of ammonia per day and 13 phosphatic plants with a capacity of 350 tonnes per day. For this we need in vestment resources of Rs. 1.7 crores which will have to come largely from the public sector, as private investment is drying up. Finally the delay in the commissioning of the Cochin and Durgapur Plants in the present crisis situation is inexcusable and the lessons learnt in lags imposed by faulty imported equipment and poor planning should be corrected for the new plants that are to be set up with Japanese help.

Crude: Further to the negotiations with foreign oil companies for equity participation or nationalisation, as analysed in the last issue of the Bulletin (page 15), it is important that attention should not be diverted to the subsidiary issue of foreign remittances by these companies. This has been regulated since April of last year by the 3 guidelines established by the government and administered by the Reserve Bank of India. The guidelines are fair to both sides and normal. The real issue is the long term arrangement for the supply of crude to the Country at this vital stage of its industrial and agricultural growth. From this point of view the discussions with the foreign oil companies are tending towards equity participation rather than nationalisation. There are alternative sources for the supply of crude apart from the four majors. But as the negotiations and agreements with the Iraqi Petroleum Company, from whom 4.25 lakh tonnes for this year, 7 lakh tonnes for next year and 8.25 lakh tonnes for 1974—75 of crude are to be imported, shows the price is the same as that paid to the Western Companies. There is the additional problem of tankers and the quality of the crude. The Iraqi crude will be processed by the third unit of the Barauni refinery. India is also one of the 3 countries which has tendered for an oil concession in the South Romailla oil fields in Iraq and if this concession is won, then ONGC will have to provide the capital for exploration and development of the oil field. Depending on the extent of the oil there, the Country's position in dealing with the international companies might improve.

Steel and Engineering: The 18th annual report of Hindustan Steel Limited (HSC) for last year concludes with highlighting the poor performance of the constituent units due to the collapse of the steel melting roof in Rourkela, the choking of the hydraulic mains in Bhilai and the continuing industrial unrest in Durgapur—all of which and the other sources of poor performance which were analysed in Vol. II No. 7 page 9 and Vol. III No. I page 16. The investment in HSC is Rs. 1,011.07 and this unsatisfactory production record has been the subject for remedial action during the current year. The result is that for the 6 months, April to September 1972, the total production was 3.9 million tonnes compared to 3.6 million tonnes for the same period in 1971. Bhilai's production is up to target, Rourkela is steadily increasing its output with 1.1 lakh tonnes of hot metal and over 1 lakh tonnes of ingot steel during September alone, TISCO maintaining its good record, with Durgapur and IISCO still lagging. In fact the major repair and rehabilitation programme of IISCO will not be completed till 1976 with the IDBI loan of Rs. 46 crores and despite the small improvements reported in the last issue of the Bulletin (page 15), it is not till 1976 that there will be production to near capacity. Meanwhile the import of one million tonnes of steel and the allocation of Rs. 250 crores to finance such imports for the current year are intended to meet the shortfall in steel supply, particularly for export firms. The price of imported

steel is being established at international prices or the joint plant committee prices, whichever is lower. In general, while pig iron prices are lower than international prices (Rs. 410 vrs Rs. 586 per tonne), cold rolled steel prices are higher Rs. 1,909 vrs Rs. 1,675). The price adjustment, therefore, is a favourable production factor. But the serious problem faced by the HSC units in December, as pointed out earlier, is the coal crisis. Bhilai's coal stock was reduced to four days supply and Rourkela's supply reduced to two days. The curious feature is the unawareness of this situation on the part of the railway authorities. There is urgent need to assure transportation of coal to the steel units. Engineering goods production has slackened due to the shortage in steel, power cuts and labour unrest. In particular it looks as if there will be a 25–30 per cent shortfall in reaching the export target of Rs. 200 crores for engineering goods. Both the domestic and international demand in Africa, Asia and some parts of Europe are increasing and it is hoped that the increased supply of steel now being arranged along with the price adjustment referred to will enable this sector to pick up on its production.

Textile and Yarn : The production of 400 million square metres of standard cloth at 1968 prices for the current year is spread over all composite mills at the rate of 3.44 sq. metres per loom shift or 12 per cent of the 1971 packed production. This self policing arrangement by the Indian Cotton Mills Federation includes payment of 60 paise per sq. metre by mills not producing their quota of controlled cloth. Similarly for 1973, each composite mill must make its contribution of 5.16 sq. metres per loom shift or 16 per cent of its packed 1971 production to attain the export target of 15 per cent of total textile production amounting to Rs. 170 crores. For 1972 the target was Rs. 145 crores. For the first seven months of 1971, around 4/7th of the target had been attained. Here again the mills not fulfilling their export obligation pay 25 paise per sq. metre in 1972 and 30 paise in 1973. Again the extension of the scheme to provide weavers with yarn at a fixed price till the end of the fiscal year, involves 20,000 to 25,000 bales of cotton yarn inclusive of 15,000 bales left over from the previous quarter. With the continuing power cut, the effect of the drought on prices and the problem of profitability faced by the mills, there is the double problem of weavers not being provided with yarn at controlled prices and the total textiles output of the mills declining. The extension of the scheme till March 31, will enable the power looms and handlooms to continue supplying the market with cloth. Finally the problem of the modernisation of the mills and the need to set up a separate financial corporation to finance the modernisation programme, as analysed in some detail in Vol. II No. 12 (pages 14 and 15) demands attention. The industry is the major contributor (21 per cent) to the Country's industrial production and employs over 9 lakhs of workers. Countries in Europe are engaged in such financial aid to modernise the textile industry. What is not proved is whether there need be a separate institution for this purpose or whether IDBI or IFC could not have a section which could undertake the programme on the basis of a project by project analysis and investigation.

Sugar : From December, the price of levy sugar has been reduced from R. 2.26 per kg. (see Vol. II No. 11 page 14 and Vol. II No. 1 page 35) to Rs. 2.15 per kg. This welcome reduction has been made possible because of the reduction in the excise duty from Rs. 30 to Rs. 26 per quintal and through the cut in the operating costs of FCI—which means that

the cost-returns of the producing units as well as the prices to the cane producers remain unaffected. It is necessary to ensure that the price of non-levy sugar does not go up. The industry itself is not in good shape. It has a licensed capacity of 53 lakh tonnes against which the installed capacity is 39.5 lakh tonnes with an estimated 1971-72 production of 30.89 lakh tonnes. The domestic consumption is expected to be 47 lakh tonnes by next year and 55 lakh tonnes by the end of the Fifth Plan. The need for a sound long term policy for this important sector is once again emphasised. The Country is the largest cane grower and sugar producer in the world with an investment of Rs. 600 crores in it, an annual production of Rs. 500 crores, paying Rs. 350 crores to the cane growers. Rs. 50 crores to its 2.25 lakh workers and contributing Rs. 150 crores as excise duty, Rs. 10 crores as income tax and Rs. 25 crores as purchase tax to the State Governments. The stakes in this production sector are high and the present short term ad hoc policies on cane production, sugar price policy and the licensing of capacity with a growing gap between licensing and production needs to be replaced by an integrated production policy.

***Cement*:** Cement output has been increasing from 13.87 lakh tonnes in October to 14.31 lakh tonnes in November very largely due to moving the output through increasing use of road transport, better wagon supply and turn around and use of sea routes as suggested in the last issue of the Bulletin. The rate of production will result in an output of 15 million tonnes for the year against the demand for 17 million tonnes. Though cement supplies have improved, the gap between the output produced and demanded can be met within the licensed capacity of 19.8 million tonnes, if the industry can be provided with the incentive to install the capacity. The real problem, however, is the Fifth Plan demand which is computed at 40 million tonnes. This doubling of capacity and production presents a serious challenge as the private sector faced with heavy investments and low rates of return is not taking advance action and the public sector is held up because of the long time delays required by HEC and HEL in supplying the cement machinery on order. Out of 32 letters of intent issued, only 8 have been acted upon, involving an additional capacity of 2.6 lakh tonnes. Under these conditions the working of cement equipment producing units need to be speeded up, some imports of machinery provided and incentives offered to the private sector to invest in this sector as well as planning the establishment of additional public units.

Agriculture : The rabi crop programme, including the emergency action is underway and it is expected that the total rabi production will be 47 million tonnes. If that were attained, then the 1972-73 total foodgrain production will be 100 million tonnes. The buffer stocks stand at 4.1 million tonnes in November and as pointed out earlier, out of the kharif procurement target of 4.5 million tonnes, it is likely that 3.5 million tonnes will be procured, while the rabi procurement could reach 6 million tonnes, if the current forecast is realised. Both in production and procurement, it is wheat and rice that are doing well while there is a sharp fall in both in the case of millets and coarse grains. In Punjab alone 6.5 lakh tonnes of rice had been procured by early December against its target of 7.5 lakh tonnes. There are in the Country's food production, certain aspects which need to be watched. One is the continuing fall in coarse grains production, which is the nutritious food and the poor man's main stay. The final official estimates for 1971-72 show that the output of rice in-

creased by 1.2 per cent to 42.7 million tonnes and that of wheat increased by 11.1 per cent to 26.5 million tonnes. On the other hand the production of bajra declined by 33.3 per cent to 5.4 million tonnes, maize by 32.9 per cent to 5 million tonnes, small millets by 20.4 per cent, maize by 10.2 per cent and the pulses by 2 per cent. It is not the total production of foodgrains and pulses which is the major problem for this year and the future, it is their composition. Coarse grains and millets production are being replaced by wheat and particularly rice, whenever some water is available and the consumption habits are replacing coarse grains by wheat and rice in the villages. There is need, therefore, the ensure an increase in the production of coarse grains even as the wheat and rice crops are being extended. This involves extending the new technologies to the small and dry land farmer. Currently these technologies are being used by the large farmer who sets the pace in wheat and rice production and who has access to all the irrigation sources. Another issue which the current production technology raises is with regard to mechanisation, on which discussion has been limited in view of employment goal of the entire system, including agricultural production. But both employment and total food production may be held up because of a shortfall in the Country's energy resources. It has been computed that the Country's agricultural energy needs an amount of I20 million HP, while only 48 million HP is available, two thirds of which are provided by men and bullocks. This is not a call for mechanisation of agriculture as in the US, but for a review of the energy requirements and a policy decision on a programme of mechanisation. A further issue is a programme to reduce and eventually eliminate the 19 million tonnes of foodgrains (about 1/5 of the total production) which are lost or damaged after harvest every year. The damage and loss are caused by moist and damp storage, bad threshing, rats and birds and poor transport arrangements. In addition there is qualitatives deterioration due to chemical changes in protein, carbo hydrates, ammonia acids, vitamins and biological agents such as fungi, bacteria and insects. For this harvest season some immediate action can and should be taken by increasing a little the temperature in storages, making the siloes airtight and improving threshing floors and transportation. There is need in the Fifth Plan for concerted programme to eliminate these huge losses.

In the absence of an adequate and reliable forecasting machinery for the cotton crop, the December forecast is that the 1972-73 cotton crop is likely to be 60 lakh bales rather than the 56 lakh bales referred to in the last issue of the Bulletin (page 20). In view of the power cuts, the textile mills will not be trading for additional cotton stocks. The Cotton Corporation will have to make large purchases and increase its stocks to prevent a decline in price. The jute crop for the current year is estimated to be 57 lakh bales, which represents a serious shortfall of 20 per cent of the total demand.

Exports and foreign ventures : The 45 day Asia 72 fair closed in mid December. It attracted six million visitors and provided India and the countries in the Asian region opportunities to negotiate trade expansion. It certainly made known both to the people in the Country and to the government and trade delegations from other countries, the potentialities and competence of India in the export field. Export orders for Rs. 20 lakhs of industrial fasteners from US and Rs. 1 lakh for hand tools from Canada were concluded at the TDA pavilion. Rs. 12 lakh exports to US of refrigeration and air-conditioning equipment, Rs. 17 lakhs of bath room fixtures for the Soviet Union and an engineering

goods order from Czechoslovakia were also concluded. The shoes export order for 13 lakh pairs to the Soviet Union is running into difficulty because the price of finished leather has increased by 300 per cent and the cost of a pair of shoes exported has increased by over Rs. 7. The result is that there is a shortfall in meeting the agreed export order by 2 lakh pairs and a further 8 lakh pairs on order is being held up. There is need for the 2 countries to agree on the price rise, with some subsidy also from the Ministry of Foreign Trade. Under a Rs. 5 crores credit line to Tanzania, machinery for power and industrial estates are being exported. Similarly equipment for a large irrigation project aided by the World Bank in Sri Lanka is being supplied by a Bombay engineering firm. The export effort of the Country for the first seven months is marked by an increase of 22 per cent. For April-October 1972 exports total Rs. 1,070.3 crores against Rs. 877.3 crores for the same period last year, involving a small surplus balance of Rs. 74 crores. This export drive registered an equal increase in both traditional and non-traditional areas of production. A serious problem in the export programme is the Country's relation with the enlarged European Economic Community. The European countries who do not belong to the community have an agreement to export their goods into the community markets without any tariff and in return the community goods will be similarly admitted tariff free into these countries. This means that the free trade area now extends over the whole of West Europe and constitutes a rather serious obstacle to the expansion of India's exports. It becomes important for India to negotiate a comprehensive agreement with EEC during the one year (1973) grace extended vis a vis India's preference in the UK—an agreement which must not only correct the growing trade imbalance between India and the community but also meet the specific problem in the trade relations of particular lines of production such as coir, coconut husk, fibre and jute. The current state of negotiations between the community and India is not very encouraging. The ministerial council of the community has not gone beyond the principle of an agreement with India, has not set up a negotiating mixed committee because some of its members wish to restrict the agreement to a consolidation of the existing separate agreements between India and the community members. The crucial question is whether there is to be a broad based Indo-EEC, to promote trade between the two, over and beyond the trade in the existing articles of tea, coir and jute. Even with regard to the latter, the community offer to reduce their tariff within the framework of GSP provided India limits its exports of coir and all categories of jute is really a retrograde step. It introduces into jute and coir the kind of non-tariff barriers which is against UNCTAD recommendations. India's exports with EEC countries are thus hanging in the balance and it is hoped that mutually profitable relations will be discussed and a mixed committee established soon to work out the details of such an arrangement. The ministerial council has moved a step in the direction of GSP by raising the duty free quotas for industrial manufactures by 7.8 per cent for coal, by 51.8 per cent steel products and for textiles by 4.3 per cent for all 90 third world countries. This will help the expansion of India's exports in these lines only to a marginal extent.

The government has to date approved 145 proposals for setting joint Indian, Asian or African firms in foreign countries. The majority of them are in Malaysia, Ceylon, Iran, Singapore, Thailand, Saudi Arabia and in Nigeria, Mauritius and Kenya. 67 are in engineering industries, two of which

are in West Germany. The special features of India's participation in the industrialisation programmes of these countries is the small amount of Indian equity investment. In 16 of the operating units, India's contribution is only Rs. 3 crores because its participation is restricted to the supply of machinery and technology, is always a minority participation leaving the country as the majority shareholder and is usually accompanied by training the nationals in the Indian firms so that they can take over the management. Quite often there is a strong request for 100 per cent Indian capital contribution or majority contribution, which India's own experience and policy puts in a position where it cannot accept such requests. And that is sound.

Aid: In December Indo-UK agreement was reached on UK's contribution to India's debt relief for the current year. UK's loan of £8 million for this purpose brings UK aid to £49 million for the year, leaving a further £14 million which is to be a capital investment loan. With this, UK's pledge for £63 million (Rs. 120 crores) for the current year will be redeemed. With the Soviet Union, agreement has been established for the supply of equipment and finishing lines for a new five stand coal rolling mill at Bokaro. Discussions are now on with the Soviet Union for setting up projects or modernising the equipment of plants for the supply of goods such as textiles, shoes and engineering goods to the Soviet Union and third world countries. A complete Indian footwear making plant with the help of Italian aid which will produce 500 pairs of shoes a day is being set up in Agra and will go into operation in July. Negotiations are being finalised with Japan for collaboration in setting up 5 fertiliser plants with Yen credit. On the occasion Unicef's 26th anniversary, it is well to recall that Unicef action in India began with the provision of 150 tonnes of skim milk powder in 1949. Since then, it has made available to the country drugs, vaccines, garden tools, pumpsets, dairy plant equipment and science kits. In 25,000 centres Unicef aid is being used. More than half of the country's 5,000 rural health centres and more than a third of its 20,000 rural sub-centres have been equipped by Unicef. It has supplied modern pasteurisation equipment, bottling lines and milk processing machinery to 13 major dairy plants; equipment for manufacturing low cost protein enriched weaning foods to the national village level, 100 high speed hammer rigs for drilling for drinking water in hard rock arid areas; and a school science programme with $10 million (Rs. 7.3 crores) in science kits. For the Fifth Plan, it is programming aid to the nutrition package programme for the vulnerable sections, that is children of 0-5 years of age and their mothers. Against this and other reports on India's aid relations in every issue of the Bulletin, the current debate on the precise meaning of self reliance and the objective of reducing net aid to zero by the end of the Fifth Plan is helping to throw light on some major issues. The first practical step to self reliance is for the Country to produce upto capacity and to ensure the productivity of its investments. As long as the major investments result in such heavy losses as they do, reliance on foreign aid will continue. The second imperative is to increase the rate of savings of the Country—public, corporate and domestic. There will have to be sensible increase on all three fronts if there is to be a real move to self reliance. Third both expanded exports, itself one consequence of increasing the productivity of our investments and making our cost structure internationally comparable, and a change in the pattern of production in the direction of greater emphasis on wage goods, should improve the balance of payments position

of the Country. Fourth as pointed out in the last two issues of the Bulletin (Vol. II No. 12 page 20 and Vol. III No. 1 page 21) zero net aid will still mean annual gross aid of $600-800 million for debt repayment purposes, and it is on this that long term (five year) negotiations should be concentrated well before the Fifth Plan starts, so that the project aid in key areas like fertilisers, steel, cotton, etc. are known and can be planned in advance. Finally there is left the aid freely offered without strings by the international agencies like the World Bank, Unicef and the UN bodies and friendly countries which should be carefully programmed in the Fifth Plan. These are some of the issues that the Country wide debate on the Fifth Plan approach paper can help to clarify.

International

Bangla Desh : The Indo-Bangla Desh joint Rivers Commission has decided on a joint survey of the Ganga from Farakka upto Goral to enable the planning of development works which both countries need. It has also proposed setting up a field machinery to carry out investigations for the preparation of a comprehensive flood control, irrigation and drainage scheme for the Sylhet-Cachar region. MMTC is to supply Bangla Desh Rs. 4 crores of coal, and a contract to supply the remaining Rs. 3 crores by July has been signed. India on its side is importing 5 lakh bales of jute to meet the shortfall in domestic production referred to earlier, out of which 2½ lakh bales have already been received. India has constituted a four man standing committee to review and appraise the work of the Indo-Bangla Desh agreement on inland water transit and trade under Article 25 of the agreement. This review should lead to smoother and wider trade relations.

World Monetary Reform : Progress in regard to world monetary reform continues to be slow and the next round of discussions of the five problems analysed in Vol II No. 8 (pages 15-17), No .9 (page 16), No. 10 (page 16), and No. 11 (pages 17-19) will be at the third meeting in March of the committee of 20. The issues are, however, now clear and revolve around three major issues. The first is agreement on stable exchange rates with an agreed margin for upward and downward adjustments. Here India has pointed out that the IMF assessment that the fluctuating exchange rates in 1971/72 did not harm the developing countries because what they lost in their reserves was made up in the reduced burden of their international indebtedness is not sound, because the two sides of equation are not comparable and because what is globally true is not true of individual countries like India. The industrial countries reserves are constantly increasing, standing at 97,079 million SDRs in October. On this matter of exchange stability, the earlier hope that the UK will return to a system of fixed exchanges by January 1, 1973 has had to be given up. Both the EEC and the committee of European central bankers have agreed that the pound should continue to float, as otherwise they would have to subsidise the fixed rate if established now. The anti-inflationary measures taken by UK, such as the 3 month price-wage freeze, have not yet taken effect, its balance of payments continues to be in heavy deficit to the tune of $81 million a month and its exports have not yet picked up. In fact the inflationary measures in all European countries have been running high at a rate of 9.6 per cent between April–October 1972, which is the highest rate since the Korean War. Spain has the highest rate of inflation at 12.3 per cent, followed by Britain (11.8 per cent), Italy (10.3 per cent) and Germany and France (8.6 per cent). Like Britain, all the coun-

tries have taken anti-inflationary measures which as of December had not yet had their effect. The UK pound is currently devalued in effect by 10 per cent. It will have to fix its parity by April when the European Monetary Union comes into effect and it is likely that at that time, Britain will peg the sterling at something higher than the current 10 per cent rate. It is in the interests of all countries—developed and developing—both for their development and the growth of world trade that there be established a stable system of exchanges. World trade of the industrial countries rose by 11 per cent in the third quarter of 1971 which was lower than the 1971 third quarter rate. The second issue is that related to international liquidity. Here again the problems are clear. . The heavy reliance on gold and the reserve currencies, the dollar and the pound, and more recently the mark and the yen, with the growing disparity between the official and free market prices of gold, between its cost of production and selling price, the problem of the hot money and the Euro-dollars and in fact the unfair burden placed on the US and UK economies in treating their currencies as reserve currencies—all these point to the need of moving away from such reliance on gold and reserve currencies and planning increasing reliance on SDRs. So far the 10 billion SDRs issued have proved themselves and it is now for the developed countries to stop spiting each other and the US and see that in their own interest SDRs represent the international liquidity of the future which will also ensure that such liquidity is under international control. The third issue is the amount of SDRs, their distribution between the countries and their link to developmental assistance. On the first issue it is to be hoped that agreement between all countries can be reached—the amount of the next issue of SDRs. But that is connected with the second and third aspects—their distribution between the countries and their link to SDRs. Here the developed countries are opposed to any change in the quotas distribution and any link to developmental assistance. What is worse is that the developing countries themselves do not now have a common approach on the question of the link. It is now necessary within the few months before the third meeting for governments to discuss these two SDRs problems and reach an agreement on either keeping to the quotas and using one of the many formulas discussed in earlier issues of the Bulletin on the link or increasing the share of the developing countries. Time here is of the essence, if some atleast of the pledges of the Second Development Decade are to be redeemed.

Technology transfers: The December International Seminar on the transfer of technology organised by UNIDO and CSIR in New Delhi and attended by 32 countries highlighted the problems faced by the developing countries. The first is that the technology gap between the developed and developing countries is growing wider and making development difficult for the latter. Second the cost of technology transfers is very high and together with the heavy burden of debt repayments is reaching the near breaking point. Third the technology that is borrowed or bought is capital intensive and is inapplicable to capital short labour surplus economies of the poor countries. Fourth the secrecy clauses lead to recurrent import of the same technology. Finally there is really little attempt to transfer technology to the developing countries which is maintained as a close preserve. India, for instance, has concluded 4,000 foreign collaboration agreements over the last 2 decades. How many of these were repetitions and recurrent? How many were really useful or adaptable to the Country? Out of the discussions at the seminar, three major issues stand out. First the crucial problem of transfer of

technology from developed to developing countries. Here, developing countries are at varying stages of development and what is needed is for each country to build the capacity to absorb and develop—through adaptation of foreign technology or creation of its own technology—the technology suited its needs. This would require for each country a national technology plan, a scientific manpower infrastructure, an agreed system of economic plan priorities and a suitable higher education system. For the immediate future there is little hope that the developed countries—and here reference is not to their governments but to their commercial and technological agencies—will either provide the transfers at lower cost, without secrecy clauses or help to adapt them to local conditions. Under these conditions the path of wisdom is for the developing countries to be extremely selective in purchasing technologies from developed countries, and ensure that such technologies are adapted to local conditions—using what the Japanese call pinching technologies. The second issue is within the control of each country and that is to ensure the regular transfer of technology from the research laboratory to industry within the country. Here India's experience might be illuminating. It has taken this country a long time to effect such transfers. And for this there is need for an intermediary like the NRDC which can help in the transfer and in the process provide the needed risk capital. Also such an agency might well be a means of attracting and securing technology transfers from the developed countries. Another aspect of this second problem is inter-firm transfers of technology within the country. Here again Indian experience is revealing. Despite the enormous amount of foreign technology bought by Indian firms, the transfer of technology among them is non existent. Every import of technology brings in to the Country large and small gadgets and processes like pneumatic screw drivers, nut runners, torque wrenches, etc. but every new firm has to import these all over again. Here a start can be made by each country maintaining a technology data bank of all the technology that has been imported and make this information available to the new firms. This inter-industry transfer is one way of building indigenous technology. The third issue that arises is the transfer of technology between developing countries. This too is non-existent, partly because only a few countries like India, Brazil, China, Mexico and Yugoslavia are in position to help in this, partly because each of them is so busy with its own development that it does not look around to lend or sell its technology, and also because the bad traditions of secrecy and price consciousness of the developed countries are being followed by these countries. Here it should be possible for these countries with the help of the UNIDO to set up agencies and programmes to exchange technologies and build common frames among themselves, and also provide transfer aid to the other developing countries, the more so as the labour intensive adapted technologies of the developing countries will be nearer the needs of these countries.

Asian Trade Expansion: The Asian Trade Expansion programme, with the two schemes for regional monetary cooperation, the Asian Clearing Union which would provide additional liquidity for foreign transactions and the Asian Reserve Bank which will pool part of the monetary reserves for regional development, received further support during the tenth session of the programme organised by Ecafe during Asia 72. The 10 day talks among the countries not only led to opening fresh avenues of trade among the Asian countries but has once more placed on the map a plan for a regional system of trade preferences among the developing countries

of Asia. This development needs to be pursued by countries like India, Pakistan, Bangla Desh, Indonesia aud China, (which has now decided to join in the activities of Ecafe) as one means of equalising trade opportunities between the developing and developed countries, particularly the block of developed countries represented by EEC.

Shipping Conference: The United Nation's General Assembly has voted in favour of a high level shipping conference to consider and adopt a convention or other multilaterally binding instrument of a code of conduct for liner conferences taking fully into account the special needs and problems of the developing countries. But the resolution is non-starter because most of the developed countries voted against or abstained on the resolution as they did at UNCTAD III. There is no use calling a conference without the support of these maritime countries because it is they who must adhere to the code to use their shipping lines and policies as a means of promoting the trade and development of the developing countries. Inter governmental discussions must be resumed to arrive at a formula which would make the calling of such a conference worthwhile and fruitful.

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II. Agricultural Development

Paddy: The December rains and floods will on the whole prove a positive factor for the Navrai and Thalady paddy. The Navrai sowings are well underway in North Arcot, Chingleput and South Arcot. The crash rabi programme using IR-8 and IR-20 involved extensive coverage over the State so that the fears that there may be a shortfall of 2 lakh tonnes are now removed. In a series of trials in various types of neutral, acid, calcareous, upland and lowland soils at the International Rice Research Station in the Philippines, IR-20 has emerged as tolerant to all soil conditions, with a superior grain quality though with a slightly lower yield than IR-8. With assured water for the season these two varieties will ensure attaining the production target for the State. Both in these districts and Thanjavur the submerging of the paddy fields have not done serious damage. In Thanjavur district alone 45,000 acres of paddy fields were under water, with receding flows within 4 or 5 days. Where the Thaladi crop was ready for harvesting and damaged, the Annapurna strain which yields in 90 days has been substituted with requisite amount of fertilisers and pesticides. All reservoirs and tanks are full so that there is assured water supply for the agricultural operations which may extend over the year. In view of the plentiful supply of water the crash programme is being extended to pulses and Thanjavur and other districts will also be making a substantial contribution in this group of food crops.

Dry farming and small farmers: Dry farming in the State has received considerable fillip from the rapid development of the chengam farm of the State Farm Corporation (see Vol. I No. 9 pages 9 and 10). Within seven months 2,000 acres have been cleared in this North Arcot location and on 1,500 acres, MCU 5 cotton is being grown over 105 acres, sunflower over 105 acres, ragi over 215 acres,

CSH 3 cholam over 173 acres, TMV 7 groundnut T 21 red gram, SA 1 redgram, castor, black gram and French beans are also being grown. This rapid development and important demonstration to the surrounding dry farmers who are now growing cholam, sunflower, ragi in addition to the usual grams, are due to the enthusiastic and whole hearted support given to the farm by the State Government and the Department. This is a case where a Union Government initiative when taken over and worked by the State authorities produces all the desired results. The farm itself is breaking even and is helping to introduce rational and technologically sound dry land farming. Among the new crops developing is sunflower whose oil is now reaching a high degree of popularity. 25 tins of 16 kilos each ordered by TUCS in Madras were sold within a week and in addition to public demand and its popularisation by the Directorate of Health Services because of its unsaturated fatty acid, its oil cake is in use for protein enriched bread. From the chengam farm, sunflower seeds are being distributed over 2 lakh acres in the State this year and will spread over 3.5 lakh acres next year. The farm is being mechanised for a cropping programme spread over three seasons and as a result of which HB 3 cumbu, CO 19 cholam, K 1 chillies and MCU 5 cotton seeds will be distributed to all dry land farms over the State. In addition the farm is planning large scale vegetable gardening to supply the Madras market. Further the farm will develop integrated mixed farming with animal husbandry, sheep rearing and fish farming on a large scale in its second phase. The problems of the small farmers are also receiving attention particularly the risk factor involved in the growing costs of cultivation and the returns obtained. These risks are absorbed by the large farmers but constitute a serious obstacle to the small ones. The costs of the inputs have been rising steeply—in the case of fertilisers by 18.20 per cent for urea, 44.64 per cent for potash, 27.12 per cent for ammonium and 16 per cent of super phosphate. For pesticides the rise is even steeper—62 per cent for endrin, 51 per cent for BHC and 62 per cent for agrosan. Labour and equipment costs have gone up by 50 per cent for bullocks, 20 per cent for tractor and 68 per cent for spare parts. The result is a high risk for the small farmer particularly in growing coarse grains, which have increased by 20-23 per cent while the rice risk is only 17 per cent. *This in part explains the declining* production of coarse grains referred to earlier. Under these conditions it is not only credit facilities that are needed. For the current year, Rs. 65 crores is being made available as short term cooperative credit for the purshase of inputs—seeds and fertilisers, (Rs. 42 crores have already been disbursed). The rate of recovery of cooperative loans is also good. Out of the Rs. 57 crores lent last year, 90 per cent have been recovered. What is further needed is to take into account this risk factor to the small farmer in deciding on agricultural policies and prices in the various State and all India bodies.

Sugar: Further to the analysis of sugar production and experiments in the State in the last issue (page 35), while the State production along with that of Maharashtra is satisfactory, the production in UP and Bihar is very poor at 60 per cent of the 1969-70 level. For the current year the total sugar production is estimated at 36 lakh tonnes calling for a reduction in both domestic consumption and exports and requiring advance action not only in this State as reported in the last issue but particularly in UP and Bihar, in view of the drought effects on the cane crop in Maharashtra, so that next year's production reaches 40 lakh tonnes and can be doubled by the end of the Fifth Plan.

It is in this context that the growing of sugar beet in both the Northern and Southern States should be pursued vigorously. Vol. I No. 11 (pages 12 and 13) of the Bulletin called attention to the experiments in the State and the prospects for growing sugar beet. Now with the serious sugar shortages facing the Country, a massive programme of sugar beet cultivation should immediately be launched. 25 varieties of sugar beet have been tried out in the North at Lucknow, Pantnagar, Jullunder, Kanke, Sepore, Durgapur, Sakarwadi and three locations, in Gujarat, all of which show a yield of 17 to 28 tonnes per acre with a 16 to 17 sugar content. In the State two varieties have been tried out in the hill areas, Nilgiris, Shavaroys, Kodaikanal, and Hosur which show that the crop is of a six month duration, yields 17.20 tonnes per acre and have 17 per cent sucrose content. In the plains trials in Madurai, Tirunelveli, South Arcot and Salem districts give an average yield of 10 tonnes per acre with a sugar content of 17 per cent. The high sucrose content has been analysed in the laboratories not only of the Sugar Cane Breeding Institute but also of the Sakthi Sugars, Appakudai. The State Planning Commission's Task Force recommendations to grow sugar beet extensively in the State should be put into effect for the next season and similar preparatory arrangements for the successful commercial scale production of sugar beets seeds should be used in UP, Bihar, Maharashtra and Gujarat to grow sugar beet as an additional raw material for the sugar industry. Cane cultivation also should be stepped up and the biological controls which have been developed through the use of many types of parasites should be used to keep under control the borer pests of this crop found in this State and all the cane growing States.

Crop research: The December symposium in Madras University sponsored by UGC and UNESCO called attention to recent developments in combating crop diseases—diseases which are in a sense more destructive because they cannot be detected until an advanced, almost final stage of the loss of the plant has been reached, unlike pests which can be detected early. The general conclusion was that the raising of disease resistance varieties is essential, provided attention is constantly given to the possibility of new diseases cropping up even in such strains. Crop breeding concepts for disease resistance should thus have a margin for the pathogen to mutate and develop new strains. For this, further research efforts should be concentrated on the physiology of sick plants, the effect of the environment and metabolic condition of plants vis a vis disease resistance. This calls for close cooperation between our crop geneticists and our plant pathologists. In the case of wheat, rice, millets and pulses, attention is increasingly being paid to a change in the structure of the plant, its prolificacy and photo sensitivity not only to develop disease resistance but also other qualities such as drought avoidance, improved cooking and nutritive and industrial properties. Some of the plant diseases affecting this State are those affecting acid lime grown in Kadayam in Tirunelveli district, Sathukudi in Ramanathapuram and coconuts all over the State. The Plantation crops research station at Kayamkulam is now developing both a fungicide to combat the coconut disease and what is more important to forecast its occurrence. This will be of help to the coconut growers in both this State and Kerala. Horticultural research in the State and the Country is helping to produce new varieties of grapes, pumpkin, melons, squash and pineapple and many varieties of flowers. These horticultural crops and flowers are in great demand in the urban areas of the State and what is needed is improved marketing so that the

increased production can be profitably and commercially grown on a large scale. Horticultural research is also addressing itself to growing these fruits and flowers in different agro-climatic conditions of the State, including, particularly the areas of Ramanathapuram and Dharmapuri.

Cotton: The State, as pointed out in earlier issues of the Bulletin, is in deficit in cotton production. It uses 12 lakh bales per year but produces only 4 lakh bales. It has been noted earlier that the All India production for the current year will be around 60 lakh bales, which will be short of the demands of the textile industry but for the power shortage facing it. Even this output would have been impossible, given the drought conditions in Gujarat and Maharashtra, if it were not for the increased yields of the improved varieties, of which 15 are in use since the last 2 decades. From this point of view the release at the end of December of the new cotton strain—MCU 7—evolved at the Tamil Nadu Agricultural University, which is the first strain to be produced any where in the world as a result of X-ray irradiation and released for commercial cultivation is important. MCU 7, the new variety is of shorter duration than any of the other strains, is of the long staple variety and can be grown in medium duration rice fallow areas of Tiruchi, South Arcot, North Arcot and Chingleput districts. This strain will increase the production of long staple cotton in this State by 18,500 bales and will add to the monetary return of the cotton growers of the four districts by Rs. 50 lakhs per annum. Seeds of this strain are now being produced in sufficient quantity to meet the needs of cotton growers. The questions of standardising the timing of new released like MCU 7 and making sure that it is ready for commercial exploitation and is available in sufficient quantity are now being examined by the University and Department. The government has also under consideration a proposal for setting up a State Trading Corporation which will provide marketing facilities for this fast expanding crop in the State. Improvements are being made in the distribution and availability of fertilisers and pesticides for cotton growers in the 60,000 hectares which will be brought under cotton cultivation in the State. The other aspect is the question of prices. The Union Government has fixed the minimum support prices for all varieties of cotton through fixing the price of the standard variety 320 F at Rs. 1,112 per quintal. As pointed out earlier in view of the slack demand from the mills suffering from power shortages, CCI will have to continue to purchase cotton, as was done for the last season—about 5.15 lakh bales at Rs. 58 crores. It is essential that the growers of the new varieties be assured remunerative prices.

Coffee: The 1972-73 coffee crop blossom estimates discussed in Vol. II No. 9 (page 19) and No. 10 (page 19) of the Bulletin of 87,000 tonnes is now in the latest coffee crop estimate for the year placed at 80,000 tonnes. Within this total, there is recorded a decline in the robusta crop which is more than made up by the increased output of arabica. The carry over from the last season is 18,000 tonnes, involving the marketing of 98,000 tonnes which is near enough to the 1 lakh tonnes availability for 1972-73 forecast in Vol. II No. 10 (page 20) of the Bulletin. The internal consumption may be 39,000 tonnes (in 1971 it was 37,904 tonnes). This means finding exports for 59,000 tonnes. The Country's export quota is still maintained at 24,000 tonnes, and India's request for increasing it to 40,000 tonnes is not likely to be accepted in view of the exceptionally good world coffee production for 1972-73. This is likely to be 72.9 million bags which will be 12 per cent more than the average of the past 5 years. The exports under

quota for 1972-73 have been fixed at 49.6 million bags against an availability of 53.6 million bags. Prices have been on the rise largely because of the decline in Brazil's production. If India's export quota is maintained at 24,000 tonnes, there will have to be a very large export to the Soviet Union and non-quota countries which last year was around 12,000 tonnes. This is a loss to the Country because the non-quota price is Rs. 100 per quintal below the world market price, apart from the loss on exemption from the sales tax. Instead of making coffee growers subside the coffee sales to the Soviet Union and non-quota countries, the domestic market should be expanded and sales increased within the Country. The whole of the North is really an untapped market.

Tea: The 1972 tea output forecast for this State and the South set forth in Vol. II No. 9 (page 20) and No. 10 (page 19) is confirmed, though the declining trend is not as much as foreseen. For the first 10 months of 1972, South India tea production stood at 83.6 million kg. compared to 86.2 million kg. for the first 10 months of 1971–a decline of 2.6 million kg., making up a little the first six month's sharp decline. However, North India tea production shot up during that period by 16.3 million kg. to 329.5 million kg., so that the All India production is up by 11.5 million kg. to 394.7 million kg. For 1972-73, India's and Sri Lanka's export quotas are 212 and 209 million kg. as reported in the last issue of the Bulletin, (page 32). While India will be fulfilling its quota, Sri Lanka's lower production by 6 million kgs. raises the question as to whether it will meet its quota. But the price and export situation are uncertain for two reasons. One is general and applies to all producing countries. The world tea output has increased for 1972 by 39.4 million kgs. to 692.8 million kgs., the African countries, notably Kenya, registering a sharp production increase. The result is international prices, particularly in the London market, have declined by £1.13. In this regard there is need to increase the consumption in both producing and consuming countries. In fact FAO's forecast for the next ten years is that production will increase by 50 per cent from 1,209 million kgs. to 1,761 million kgs., while consumption on present trends will increase by only 20 per cent. Hence the need to increase the consumption first in producing countries like India. The other problem disturbing tea exports is internal to us in India and is a consequence of some provisions of the Foreign Exchange (Negotiations) Bill of 1972 which is aimed at stopping the large scale leakages in our foreign exchange earnings. Some of its provisions such as Clause 26 which stops foreign managers or consultants being appointed without RBI approval are sound, as there is no need for this kind of foreign technical assistance. Others like Clause 17 which requires declaration of full value before export is impossible in the case of tea exports whose price is decided by the supply and demand forces at the London auctions. Or its provisions for effecting the sale when the price is known, after obtaining RBI approval, is unworkable as the buyer wants delivery on the spot. The intention of sub Clauses 9 and 10 seems to be reducing dependence on London auctions which is sound if done gradually and if the fact that 30 per cent of our exports is now dealt with in this auction centre is taken into account. Again Clauses 25 and 27 which restrict the operation of plantations which have a non-resident interest exceeding 40 per cent, may result in some of our best plantations just being run into the ground for lack of working capital or because their subsidiaries for the sale of tea may have to be closed down. In all these clauses there are escape sub-clauses vesting discretionary powers in the RBI and government authorities who should now

administer this sound legislation in such a way that our export interests in this important foreign exchange earner are both safeguarded and expanded.

Dairy and Fish Farming: The second dairy unit set up by the Tamil Nadu Dairy Development Corporation at the Ambattur Industrial Development Estate as a "mother dairy" is a small contribution to counter the downward trend in per capita consumption of milk and its production. The offtake of milk and milk products which was 132 gms. per day in 1952 fell to 123 gms. by 1961 and is now only 103 gms. Milk production increase in its turn fell from 1.33 per cent during 1951-56 to 0.61 per cent in 1967-68. This serious decline in production and consumption is due to the poor quality of our cattle and even more to their poor feeding. Improving milk production, therefore, means changing the type of animals to those with high milk potential. The State Planning Commission's Task Force has recommended a whole series of measures including artificial insemination with better breeds and more veterinary services. But equally important is animal nutrition. With poor food, even cross bred buffaloes and cows become non-descript animals, whereas well fed non-descript cows and animals can increase their yields by 100 to 200 per cent. It is important to study the fodder needs of different types of cattle and meet them as part of the working expenses of dairy farming. In fact dairy farming is increasingly becoming a full time skilled occupation requiring education and training of the farmer, along with the other inputs of seeds, water resources for growing fodder and veterinary and breeding facilities. The Ambattur mother dairy will indirectly help in the development of such a system in its neighbouring areas. The processed milk will be transported in special tankers to dispensing stations in the city where it will be pumped into 1,000 litres dispensing machines. Each machine will have 4 faucets for collection of milk by using a token and a refrigeration unit to control the temperature. Thus the problems of transport, packaging, retailing costs and contamination dangers will be reduced, and above all the consumption of milk will, it is hoped, begin to approximate to the ICMR minimum of 210 gms. per person per day in the city.

Fish farming received further help with the decision of the Union Government in December to provide duty free diesel oil for mechanised fishing boats and large fishing boats which are engaged largely in export trade activities. Further a large marine research vessel, Raster Lliger, based in Cochin is undertaking large scale scientific investigations of sardines and mackerel stocks in the area between Cape Comorin and Ratnagar. The research vessel equipped with modern designs and powerful fish detecting gadgets is making the survey in collaboration with scientists from FAO. The follow up of the survey will call for further investment in fisheries development by the Union and State Governments.

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III. Industrial Development

Salem Steel: The issues in regard to Salem Steel in light of the decision to re-examine the decision not to expand Durgapur's stainless steel capacity as set forth simply and clearly in the last issue of the Bulletin (page 32) still stands. The only new element is the speculation that the Union Government's decision to meet Durgapur's demand may involve not giving it the full 60,000 tonnes stainless steel capacity it has demanded, but a smaller amount of 22,000 tonnes capacity. The rationale for this is found in the NCAER estimate that the demand for stainless by the end of the decade will be 1,10,000 tonnes. If the existing 13,000 tonnes Durgapur capacity and 75,000 tonnes Salem capacity are then deducted, there is then left 22,000 tonnes which could be allocated to Durgapur. There is the further suggestion of the Durgapur Alloy Executives Association that as India's operating tradition is use of a maximum of 75 per cent capacity, to produce 1,10,000 tonnes of stainless steel, 1,50,000 tonnes capacity should be created, which will allow Durgapur to be given 60,000 tonnes. But this is the counsel of despair and is wrong reasoning, as one of the Fifth and future Plan objectives is capacity production. If there is to be any futher expansion to meet further increases in demand (and this should be curbed as stainless steel is really a non-essential item), this should be met most economically by expanding Salem. In this connection it should be noted that stainless consumption is mostly in this State and the South and involves an annual import of 18,000 tonnes at a cost of Rs. 11 crores per year. The next stage for Salem is the producing of detailed project reports, particularly with regard to its iron making and steel making processes, on which the Dastur report was silent. For the steel making process, the Sarin team which toured Europe has made recommedations (see Vol. II No. 7 (page 23), No. 8 (page 21) and No. 10 (page 21). For iron making, a committee has been appointed consisting of Dastur, HSL, CEDB and the steel ministry, to make a report. It is important that these two gaps should not be used as a means of changing the carefully worked out Salem product mix, its investment of Rs. 340 crores, its estimates of Rs. 130 crores of annual turnover and the resulting cash surplus of Rs. 40 crores. The Union Government's target date of 1977-78 for the plant beginning operation can and should be adhered to, with the clearing of the 1,355 acres site for the first phase and the acquiring of a further 365 acres for the second phase, and the railway exchange yards and sidings, water supply and electricity power facilities being agreed upon. There is, however, a larger question concerning the whole steel production programme of the Country where a number of proposals are under consideration for expansion. There is the Durgapur proposal to increase capacity from 1.6 million tonnes to 3.5 million tonnes. Bhilai is to be expanded from 2.5 million tonnes to 4 million tonnes, and even beyond to 4.8 million or 8 million tonnes, through what designers call mirror expansion. Vizag and Vijayanagar plants have under consideration expansion from 2 to 3 million tonnes. Rourkela is to be expanded from 2.3 million tonnes to 4 million tonnes and TISCO from 2 million tonnes to 4 million tonnes. In addition there is the Orissa claim for a second steel plant. There is need for a national policy on steel capacity expansion over the next 2 Plan periods which will take into account, the technical, engineering, economic and political elements that form the total picture. Expansion there must be. It must be geographically scattered, con-

sistent with capital intensity and economies of scale characteristic of this sector. A group of political leaders, economists, engineers and research specialists can help to bring about an agreement on source a perspective plan.

Neyveli: As pointed out earlier in this issue, the output of lignite at Neyveli is at its lowest. As of October 31, 1972 the total production of lignite amounted 1.79 million tonnes against the target of 3.6 million tonnes for the year which had been revised downward to 3 million tonnes. This poor performance resulted in closing down the briquetting and carbonisation plant and reducing power generation to around 150 MW against the 600 MW capacity. The reasons for the low lignite produced have been analysed in Vol. II No. 2 (page 11), No. 4 (page 17) and No.6 (page 27) of the Bulletin. They trace to the outdated technology in use, lack of proper maintenance of equipment and disturbed labour relations. The Subramanian Committee set forth eight precise recommendations in June 1972 in order to raise the output to 6 to 6.5 million tonnes per annum. 7 months have passed since the report was made to the Union Ministry of Steel and it is still said to be under consideration. It is hoped that the equipment recommended will be in place within a month so that lignite for the power, briquetting and fertiliser plants may be available in the required amounts.

TNIIC: The 1971-72 record of the Tamil Nadu Industrial Investment Corporation shows both concentration on priority sectors and increased profitability. Nine units in the small sector to the tune of Rs. 105 lakhs were assisted in the backward areas of Ramanathapuram, North and South Arcot, Madurai, Kanyakumari and Dharmapuri. The small units established a a motor cycle unit in Tirupattur in Ramanathapuram, surgical dressing, packaging, printing, heavy chemicals, aluminium products and fruit canning in other areas. 14 applications from road transporters are under examination and one for Rs. 60,000 already approved. 20 technocrats scheme are under examination for Rs. 22.11 lakhs out of which 3 for Rs. 1.45 lakhs for setting up units for chemicals and auto components have been sanctioned. Four schemes for rural medical practitioners costing Rs. 3.38 lakhs have been approved out of 23 applications for 14.19 lakhs. The total aid to these priority sectors amounted to Rs. 257 lakhs. This is a good start and shows the viability of the priorities. The Corporation has also for the first time in 12 years showed profitable working, declaring the minimum 3 percent dividend due to the increase in its gross income and decline in its gross expenditure.

Medium and Small Industries: The cellular concrete Plant (Celcrete) set up at a cost of Rs. 365 lakhs inaugurated in December in Ennore will use sand or fly ash (which is growing menacingly in volume), gypsum, lime or cement to manufacture celcrete blocks and roof slabs which are light in weight, can withstand high stress and pressure and can be easily worked by sawing, drilling, etc. thus economising in time and money. It has low inflammability, density and dampness and it evaporates moisture rapidly. The raw material is lime which is obtained from the quarry in Ariyalur in Tiruchi district and the unit provides employment for 400 workers. The unit will produce annually 5.6 crore bricks during 1971-76, closing by half the gap between supply and demand. At Ambattur, a steel wire factory to produce 21,000 tonnes of wires annually, to be increased later to 26,000 tonnes at a cost of Rs. 1 crore has been established. The plants, machinery and technology are indigenous and will meet the demands of ancillary

units in the State for high and low carbon steel drawn wires. The growing demand for all types of steel wires – aluminium conductor steel reinforced (ACSR) core wire, pre-stressed concrete wire, spring steel wire, cycle spoke wire, etc. will be met from the factory, using indigenous materials and supplies. It is hoped that aluminium supplies will be regular and adequate to feed this important initiative. A skim milk powder plant with a daily capacity of 10 tons is starting in Madurai. The Tamil Nadu Dairy Development Corporation which is sponsoring the project will increase its milk handling capacity by 2 lakh litres per day and siphon off the seasonal milk surplus in the rural areas. By offering a continuous and steady demand for milk, it will encourage dairy and mixed farming in the surrounding villages. The plant will be equipped with the latest type of spray drier to produce the skim milk. The ten ancillary industrial estates supplying equipment to the Bharat Heavy Electricals (BHEL) Tiruchi will be increased by a further 10 to meet the increasing demands of BHEL. The new units have been allotted to the entrepreneurs and production in them will start by April, This brings to 47 the number of conventional, functional and ancillary industrial estates in the State.

Speeding Small industry clearances: Parallel to the report of the sub-committee of the State Industries Development Committee for simplifying licensing procedures analysed in Vol. II No. 12 (page 28) of the Bulletin, the State Administrative Reforms Commission has issued a report setting forth 18 recommendations with a view to speeding clearance procedures for small industries. The problem is well known and was analysed in Vol. II No. 12 (page 37) of the Bulletion in discussing the conclusions of the Maharashtra Small Industries Conference. For this State, as of 30 September 1971 there were 24,393 small industries, producing Rs. 183 crores of goods and employing 12,444 supervisory personnel and over 1 lakh workers. In setting up a small industry, the entrepreneur has to clear with 8 agency officers, deal with their confusing, overlapping and outdated norms, and negotiate with officers at different levels within each agency so that the result is a long delay in clearing projects and endless labour and frustration on both sides. The Commission's recommendations are aimed at decentralising decision making authority, eliminating outdated and overlapping regulations and reducing delays in its recommendations. The major recommendation is to provide the entrepreneur with one person with whom alone he will deal and who will have the authority to make decisions. That person is the Assistant Director of Industries who will also be the member-secretary of the District Committee for small industries and who with the help of the committee will quickly get all the clearances. It is also recommended that the Panchayat rule requiring clearance by the Inspector of Factories even when an industry is not covered by the Factories Act be deleted, that cottage industries no longer be cleared by health officers, that the Local Authorities Act be amended making it obligatory on them to give a decision within 60 days, and that all along the line—the inspector of factories, district health officers and municipal health officers, the regional deputy director of town planning – all to have delegated authority to make decisions. The report further recommends a periodic training programme to educate the district officers of the 8 agencies in how to promote small industries, and not simply control and police them. The recommendations should be put into effect by order of Government. They constitute an important incentive to the growth of this employment generating sector.

Handloom: The December conference ,5,000 self employed handloom weavers Coimbatore once more brought to the ore the worrisome problem of this sector—ie self employed section of the handloom eavers. They claim that 27,000 self mployed handloom weavers are without mployment because the wholesalers are iot placing orders with them. This in turn s due to the handloom crisis—the extraordinary amount of unsold stocks discussed in Vol. II No. 6 (pages 31 and 32), No. 10 (pages 23 and 24), and No. 11 (pages 27 and 28) of the Bulletin. The conference solution is not really a solution. It can help a little. The first is for the State Government to get the Union Government to reserve coloured sarees and dhoties for the handloom sector. This the State Government is doing but what is needed is some punitive measure, which is not easy to execute, to prevent power loom goods in this category from other States flooding the market here. The second solution put forward is to regulate wholesalers and treat handloom weavers as permanent workers of the wholesalers with attendant privileges and amenities. This again might help in stopping some of the exploitation procedures of some of the wholesalers but is no solution. The solution lies in further subsidising the prices of the sector and the accumulated stocks so that the demand grows. The committee which is examining this whole problem should soon be submitting a plan of action. It is to be regretted that the State Planning Commission's Task Force did not really examine the problem of handloom weavers and put forth a long term programme of viable action. Handloom exports are increasing, particularly to the ECM countries. Cotton handloom exports rose to Rs. 22.66 crores in 1971–72, being a 50 per cent increase over that of the previous year and might pass the Rs. 25 crore mark for this year. Cotton readymade garments are particularly in demand in the ECM area so that the one million dollars duty free quota for cotton handlooms and the one million dollars for silk handlooms were exhausted within the first five months of the year. The quota should now be raised to $2 million each, for with the accession of UK, Denmark and Ireland, even this increase will be insufficient to meet the pressing demand in the enlarged ECM area. The US also has a quota and 11.9 million sq. yds. of handlooms have been exported to it in one year from October 1971—September 1972. New export markets in Australia and Africa are opening which help the Country's foreign exchange needs. But the solution to the problem of the handloom industry must be found within the Country.

Leather: As pointed out in the last issue of the Bulletin (page 36) due largely to banning of the export of raw hides and skins from the Latin American countries, the 1972 prices of hides and skin reached unprecedented heights in the international market. The American raw hides prices which had been 13 cents per lb in 1971 shot up 400 per cent to 50 cents per lb in September-October 1972. Internal prices in the State and the Country also reached high levels, increasing by over 100 per cent and there was a large export of hides and skins during the year. Leather export earnings for 1972 was Rs. 150 crores as pointed out in the last issue. In addition to the danger to the finished leather trade in the State that this spurt represents, as detailed in the last issue, consumer resistance to these high prices are bringing into use synthetics in Europe and America Further the increased prices have mean that the procedures in the State have t find increased working capital and take o greater risks in a somewhat volatile situ tion. The government, therefore, is abo ready to take action to cut down expo of hides and skins. The Union Minis of Industrial Development proposes a to

ban, while the Ministry of Foreign Trade proposes a large increase in the export duty. But there are considerations on the other side. Hides exports earn Rs. 10 crores and our processed leather goods have not yet found a ready overseas market. While the State's contribution to finished leather exports increased last year by 10 per cent to Rs. 4 crores, for the Country as a whole there has been a very small increase in finished leather production. For this, there are a variety of causes. The Government's poor licensing policy has been one factor. Second as pointed out in Vol. II No. 9 (pages 23 and 24) of the Bulletin the demand for leather products keeps changing rapidly with differing fashions and tastes and our producers cannot keep up with these changes, most of them not even being in touch with such changes. Further most finished leather goods producers are small units which are not mechanised to meet changing fashion demands. A ban on export of raw hides and skins will not lead to increased finished goods because of this situation. The units are chary of mechanisation because that will attract excise duty which will make them non-competitive. One way out is to exempt the small units from excise duties. But in fact there is need for a restructuration of our leather industry in light of the developments in the skin area and of the desirability of expanding our exports of finished leather goods. It is hoped that the report of the Sitaramiah Committee will give a lead in this matter.

It is against this background that the Union Government's decision in mid December to canalise the export of semi processed hides and skins through the State Trading Corporation has become a major issue for this State. The leather producers and units in the State have reacted sharply against this decision, held a work stoppage week (hartal) from December 21 to 28, and have further decided to stop production in all 400 tanneries involving 60,000 workers from February 15. This will involve a serious loss of production (in December the State leather turnover was Rs. 1 crore a day) and export markets (there are 500 buyers abroad). The major reason for the government's decision is its desire to bring about a change in the pattern of trade by discouraging and eventually eliminating the export of raw hides and semi-processed leathers in order to deal with the Country's leather production in its totality, in particular to encourage the mechanisation of leather units. But the manner in which the government decision was carried out has been resented. While the Sitaramiah Committee is understood to be recommending a reduction in exports of semi-processed leather, the canalisation of leather exports does not flow from its recommendations and was decided without consultation with the trade or the two development councils (for export promotions and for the industry) attached to it. The substance of the quarrel is even more serious. The export trade in leather calls for a high degree of specialisation and individual initiative by some 300 exporters dealing with 500 customers from all over the world, each of whom has special needs which must be understood and catered to. The traders fear that a single State organisation will undo the custom built trade carefully built up over the past 100 years. And then there is the record of the STC in selling and its rather slow moving procedures. STC's handling of mica and human hair and its sale price of shoes to Russia (referred to earlier) at 3 per cent above the 1970 levels while Greece and Italy sold theirs at 60 per cent and the traders sold at above 100 per cent levels are referred to. Further nearly a month after the canalisation announcement, no norms for post canali-

sation business have yet been established. The result is a serious deadlock which should be resolved by mutual discussion between the 2 parties. In December alone Rs. 2 crores of production and exports have been lost and the fate of the 60,000 workers in the tanneries and that of the farmers selling livestock are involved. The State Government is trying to bring about a settlement whose broad lines should be to give the trade its head, with STC competing with it in organising the exports, through subsidising mechanisation programmes and a sharp reduction in the exports of raw hides and semi-processed leathers.

Madras Refineries: Madras refineries has had a good year ending 30 June 1972. Its production programme was near capacity—in crude, asphalt, lube base stocks, ATF and LPG—increasing from 120 to 300 per cent on the various items compared to the previous year. Its sales have doubled compared to 1969-70 and will treble for this year. The company was thus able to declare a maiden dividend of 9 per cent for this year and repay the B series dollar loan and reduce the A series. Having achieved 2.5 million tonnes of crude, it is engaged in further increasing its throughput, improving its product pattern and developing new products such as Inkol-80, axle oil, and rubber extender oil. Cooking gas is plentiful in supply but short in distribution, mainly due to lack of gas cylinders. The chairman of Madras refineries has announced that the Union Government has permitted import of the special steel for making cylinders as the HSC production was insufficient for the total demand in the Country. With the reduction in the price of gas and increased cylinder, the demand can be fully met.

Rubber goods: The State is about to become the largest producer of tyres with the commissioning of the third producing unit referred to in Vol. II No. 12 (page 29) of the Bulletin. The rubber industry is one of the few ones which is fully utilising installed capacity and after meeting the growing domestic market, is developing a large export market. The industry is backed up by production of rubber which makes itself sufficient to meet industrial needs. There are some problems of unbalanced growth in the industry which were discussed at the December Seminar organised by the Indian Rubber Manufacturers Research Association to which attention should now be given. The State Government has offered facilities for setting up of a research and development wing to the Association in Madras.

Tuticorin Harbour: There has been a slackening in the construction of the Tuticorin harbour project, with the result that the Mangalore harbour may well take its place. The Northern break water construction has slowed down to 1/6—1/8 of what it should be and its comparison with the Southern break water and Mangalore works is disturbing. The result is that the cost of the project originally established at Rs. 22 crores will rise steeply. The first stage of the project with 4 berths for salt, cement, coal and general cargo is to be completed this year but now its commissioning is postponed. With this delay, the project work can be restructured for the harbour to take in vessels of 45 feet draft instead of 35 feet draft planned, as this is the practice in the West and Mangalore is planning to receive 51 feet draft vessels. Because of this delay, SPIC is building its own ramp in the Southern break water (which is an added expense). The Union Government should take steps to speed the completion of this important project and use the State Government services for this purpose.

Private sector reports : Deccan Sugar and Abkari's report for the year ending 31 May 1972 show good performance, with higher realisation on sales of sugar (Rs. 811.48 lakhs compared to Rs. 738.99 lakhs for the previous year) and better sugar recovery at both Samalkot and Pugalur factories. At Samalkot 1,25,381 tonnes canes were crushed and 13,606 sugar produced at a recovery rate of 10.8 per cent, because of the good quality of cane at Samalkot. At Pugalur there was lower crushing due to smaller cane production and an interruption following a strike and lay off. The State Government fixed the cane price at Rs. 85 per tonne as against the statutory price of Rs. 75 per tonne (see Vol. II No. 9 pages 24–25) and this price was paid at Pugalur and also at Samalkot. For this year cane plantings are higher at both, Pugalur and Samalkot and with higher prices for cane fixed by the Government (see Vol. II No. 7 page 21) the company expects to crush 2.85 lakh tonnes at Pugalur and 1.5 lakh tonnes at Samalkot. Proposals for increasing the crushing capacity of the Samalkot factory to 1,500 tonnes and the Pugalur factory to 1,800 tonnes under the liberalised licensing policy of the government are under study. The production of spirit at the Samalkot distillery was lower, due to short supply of molasses, while the production of carbonic acid gas was higher. The company's functioning will assure increased supplies of sugar and bye products for the coming year. The annual report of Sakthi Sugar for the year ending 30 June 1972 also records a very good operating performance. With good maintenance of plant and machinery, sound planning schedules and planting area and with a considerable expansion programme, the factory handled 5.9 lakh tonnes of cane (against 4.5 lakh tonnes the previous year), with a recovery rate of 9.52 per cent. The sugar output was 50,063 tonnes. For this year the programme is to crush 6.5 lakh tonnes and the 25 per cent increase in output was due to 290 crushing days, in which also the company has set a record. The turnover for the year increased to Rs. 10.55 crores, compared to Rs. 6.46 crores for the previous year. The company has ploughed back a part of its resources to increase its capacity from 2,000 tonnes to 2,500 tonnes and to construct the 2 million gallons alcohol distillery referred to in Vol. II No. 7 (page 27) which is now being expanded to 3 million gallons, due to the availability of molasses. The company is planning to continue its modernisation, expansion and product diversification programme and participates in the voluntary health service as reported in the last issue (page 42). The labour management relations are on a sound footing. Kamani Metals and Alloy's annual report for the year ending 30 June 1972 makes a case for a special agency with official and non-official representatives to regulate the import of non-ferrous semis and to promote indigenous capabilities through modernising existing plants and providing them with the necessary balancing equipment. Its new unit in Bangalore with modern facilities for pickling, rolling, bright annealing, flattening, slitting and cutting will meet the demands for flats of low carbon steel, aluminium, copper, and brass in the Southern region. Exports during the year increased by over 13 per cent and its defence production has been satisfactory. The firm is planning further expansions to meet the non-ferrous input requirements of our growing industries.

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IV. Education, Science and Culture

Unrest in Educational Institutions: The December (1972) tally of unrest in educational institutions was 14 incidents in 8 States. The forms it took were strikes, stoning of buses and police, burning of railway property, wrecking university property including examination records and man-handling of the Vice-Chancellor or the Principal. The causes for the disturbances were (a) participation in political events in 6 cases, (b) conflict with bus and railway authorities over conditions of travel and ticketless travel in 3 cases, (c) the onset of examinations in 4 cases, (d) disapproval of the Vice-Chancellor in 2 cases, (e) demand for change of syllabus and conditions in the workshop in 2 cases, (f) conflict with the police in 2 cases and (g) the opposition to raising of fees in 1 case. In addition in one State, 2,800 teachers of 28 constituent colleges and post-graduate departments of its six universities went on an indefinite strike for higher pay scales, which affected 1 lakh of students. The Union Government announced on December 16 in the Lok Sabha that between June and November 1972 there had occurred 4,316 cases of student unrest and that more than a third of them, 1,395 were due to regional, linguistic, communal or parochial factors which had no relation to academic or campus matters. If it is borne in mind that higher education is still enjoyed by a privileged few in the Country, that as against 3.2 per cent of students of the university age of 17-24 who are at universities and colleges, 96.8 are outside colleges, the seriousness of using or misusing this restricted facility adequately and effectively becomes apparent. One negative issue about the unrest situation is the desirability or otherwise of those matters being discussed in legislatures where they become part of the stand taken on various issues by the political parties. The legislature has a responsibility for all aspects of development including educational development and is the instrument for ensuring public accounting of public moneys. An evaluation of the total situation in the Country or the State by it is necessary and can help in evolving solutions. But to take up a discussion of the disturbance on the very day of its occurrence or the day after seems to fan the flames of anger and emotion and provides the kind of publicity which some of those involved in the disturbances are looking for. This is a general problem in all countries. The TV coverage of university disturbances in US, France and Japan raised the same kind of issue. In this Country, legislative debates so far have kept the disturbances going and might call for a convention in the legislatures to let academic and in necessary cases the constituted authorities work out the solutions in each individual case before there is an overall review by the legislature. Three suggestions have been proposed during the reporting month, December 1972, to deal with educational unrest. On suggestion made by a number of Chief Ministers at a meeting with the Prime Minister is for each university to establish a cell to deal with student grievances, while parallel action is taken to relieve the over crowding of the universities, to reform the examination system and to restructure the teaching programme. This is the consensus in the Country and it is now necessary to proceed to action. A second attempt which is actually being tried is the formation of a student teacher committee at Delhi University to resolve the current crisis in the campus. A third programme now under way is in Coimbatore where an ad hoc committee of educationists, parents and citizens has been set up to deal with and propose solutions to the problems of

student unrest in Coimbatore. These last two action attempts are timely and should be followed by all cities and university areas to deal with the grave immediate breakdown in education facing the Country.

Educational Reform: The Vice-Chancellor of the Madras University announced that the University plans to start a Department of Education by June 1973. Such a department, which has been long overdue, will fill the gap in the State for a centre of educational and pedagogic research pointed out by the State Planning Commission's education plan and will be a valuable complement to the State council for Educational Research and Training proposed in the Plan, as the motor force for educational reform based on a comprehensive and integrated programme of research. He also announced that with a view to raising the standard of collegiate education, the new syllabi for the Pre-University and degree courses would be introduced from next year and such a periodic revision of the syllabus will be undertaken every 3 years in the University. Another reform initiative in work based vocationalised education as an instrument of self employment is the Education-Research-Productivity scheme launched by the University Grants Committee under which education is being linked with productivity on the basis of a research programme. Three types of projects have been launched under this scheme. One is located in Gujarat Vidyapeth, the Basic Education and Science Institute, where research is being undertaken on linking training in various crafts with education. This centre is particularly concerned with the linking of science with the basic education—a kind of work based science education. A second scheme is CoSIP—College Science Education Development programme—located in several colleges in this State and other States where production units are started in the colleges under the joint guidance of educationists and industrialists. A monthly newsletter issued by the Madurai University reports on the development of this scheme. A third scheme, college students Research Participation Scheme, located in some colleges brings together students and teachers in the study of the problems of the local community and preparation of project reports on the problems. One aim of this scheme is to end the frustrating isolation of the student and relink the college, students and teachers with the community. All these programmes have a common aim in making education work based and preparing the students for the employment market. Another important innovation is the introduction of population education in the new school syllabus in the State, (following the research done by NCERT (see Vol. I No. 11 pages 17 and 18). The course is intended to make students aware of the population problem and crisis in the State and Country and the harmful consequences that follow from uncontrolled population growth. A problem that Madurai and other cities in the State face is the growth of the so called un-recognised schools which is a very mixed bag of some good and many very poor nursery and English medium institutions. Those who suffer from this proliferation are the students who face a dead end when they leave these schools because their school work is not accepted by the recognised schools. What is needed is a system of Department supervision and authorisation for any effort to start an educational institution at any level, without hampering educational initiative, innovation and in appropriate cases the paying of fees in these institutions. A further reform action is that of the Union Ministry of Education which is in the process of preparing model curricula for school class I-X and for the junior college or senior secondary grades for the next 2 years. It is important that

these models should on the one hand ensure a high uniform standard in core subjects like mathematics, science, history and geography but allow in all subjects including the core ones flexibility for the learning programme to be based on the actual work situation in the locality where the institution is located. This programme renovation should be accompanied by adequate and updated trained staff, minimum equipment and the means for continuous revision in light of the explosion in knowledge and the development of the local areas. The translation of this principles is difficult because it requires that the school be one step ahead of the local community but not too far ahead. A related development is the 47th All India Education conference at the end of December in Varanasi which discussed the problem of the slow pace of the growth of primary education and adult literacy in the Country. The proposals made for nationalising elementary education and making primary education a subject in the central list were expressions of frustration at the pace and quality of basic education, rather than a serious proposal to deal with education, which is a one to one relationship and not a global and macro one. Finally, the Kerala Plan for education for the Fifth Plan which has been published follows closely that proposed for this State, with heavy accent on work based and vocationalised education as a means of improving its quality, relieving the rush to higher education and eliminating stagnation and repetition. On the last objective, the means proposed will not increase the holding power of the school. Even more than in this State, finance has become a serious bottleneck not only to educational progress but also to State development. 80 per cent of the State revenue from taxes has had to be allocated to education. Education expenditures have increased from Rs. 17 crores in 1961-62 to Rs. 71 crores today. And with the abolition both of tuition and examination fees upto SSLC, the lowering of college fees and the State payment of all college teachers this burden is bound to increase and become a real bottleneck to other needed investments. The vocationalised practical programme proposed can make for qualitative improvement and correct the sad story recounted by the Chief Minister of engineering and ITI students who had been asked to help the panchayats with the 1 lakh houses scheme and who gave wrong technical advice and showed themselves incapable of demonstrating the work involved themselves. This is the case in all States and the need for vocationalising our vocational institutions is as relevant as that of our general educational institutions.

Technical education: The proposal for establishing autonomous polytechnics made by the Damodaran Committee (see Vol. I No. 6 page 10 and Vol. II No. 5 page 26 of the Bulletin) is now being acted upon. The Union Ministry of education has formulated a model Bill for giving academic autonomy to certain well run polytechnics which will give them the flexibility and freedom to adapt their training to local industrial needs. The Bill is being circulated to the States who will have to act on them. Such autonomous polytechnics, following the Damodaran Committee recommendations, will be able to formulate their own curricula, conduct their examinations, assess students and teachers performance and award diplomas. In this State the Educational Plan recommends that the Technological University should oversee all polytechnics and be responsible for setting up some autonomous polytechnics. Another development to be noted is that under the Quality Improvement Programme at a 10 day workshop on teaching methods for the professors of engineering colleges organised at IIT, Guindy, in December, where

an important suggestion was made that all engineering college teachers should undergo a programme of training in teaching methods or a short term course on modern aspects and methodology of technology. This places teacher training on a new footing in the State and will also provide for assessing excellence in teaching and recognising important innovations in teaching. It is not surprising that engineers have come to recognise the importance of teaching methodology and technology as they are in the forefront of innovation processes. It is hoped that this will have a speed effect on all teaching institutions. Another useful development in the State is the setting up in the Guindy engineering college campus of an automobile inspection and testing facility needed by ancillary industries engaged in making automobile spare parts. In the State which has one of the largest automobile parts production, the demand for spare parts has outrun installed capacity of the large plants. Hence the small ancillaries have a growing market and need this facility, which they individually cannot afford. The government has also allotted 640 acres at Guduvancheri for the development of a test tract and research centre by the Industrial and Scientific Research Association which could develop into a much needed automobile research and development centre for the State and the Country. The Government and the State Planning Commission have constituted an expert committee under the chairmanship of Mr. V. T. Titus, Director of Collegiate Education, to review the state of commerce education and recommend a programme for its development in the Fifth Plan. This was one of the recommendations of the Education Plan. The committee is composed of Professors of commerce and business leaders. It is also requested to formulate a detailed programme for management education in the State. Should such a programme follow the IIM pattern of Ahmedabad and Calcutta or should a new programme which would combine ITI and IIM be proposed? Should this programme provide multipurpose training of all different types of managers or should it specialise in training only the top level innovators and leave to the universities the training of other managerial levels. A related issue has also been raised in the State. Should the system of education for qualifying for a chartered accountant become part of the university programme of study like that of engineering, medicine or agriculture? In favour of the suggestion is that such a system would make possible a broader training base including management accounting, cost accounting and some social sciences. It would introduce a certain discipline in training and raise its standard. Against it is the present low level of university education and the extent to which chartered accountancy has to be work based. But these very qualities can be mutually profitable to a university based chartered accountancy programme and to the universities.

Science: The CSIR data bank referred to in Vol. II No. 9 (page 31) of the Bulletin has now been approved and the council has been asked to set it up. Study teams are being sent by the council to Europe, US and Japan to inform themselves on the operation of such banks. With the regular supply of the latest documents and materials in scientific, industrial, agricultural, medical and nuclear research from leading institutions both in the Country and from abroad, the bank will be able to analyse, classify and store the data in order to be able to provide the Country and its firms and business units with technological choice and economic and financial options in various fields. The bank will also help in making decisions on what technology to import, what is available in the Country

and what adaptations are needed. With the mediator role played by NRDC including the provision of risk capital referred to earlier, the data bank which will start operating in a few fields and later expand to others will be an important means for ensuring the gainful transfer and adaptation of technology, on which comments were also made in the last issue (page 41). The need for setting up an agency to coordinate farm technology which should extend beyond passing on to the farmer, the technology of crop raising to include a complete packet comprising production know-how, marketing credit, banking, crop planning, cooperation, dairy farming and fisheries, has been suggested at the Delhi December Seminar on agricultural communication. At the moment these various technologies are either not communicated or operate in isolation and sometime in opposition to one another. There is need at the State level for an organisation to develop such a farm communication packet, with the help of the agricultural university, using the district and block officers in dessiminating such a packet to the farmers. The need for using computer facility in farm research has been emphasised at the Institute of Agricultural Research Statistics. As future advances in agriculture will come not only from breeding break throughs but also from agronomic factors, their mutual reinforcement and integration require that the results of sample surveys of agricultural practices be analysed and examined speedily and at various levels with the help of a computer. In fact, it was suggested that if computers had been used in agricultural research, our Green Revolution could have been advanced by a decade. A further development is the Country's first mini agricultural university which was set up in early December in the Gurgaon district of Haryana by the Haryana Agriculture University under which farmers and farm families in the area will be provided with all specialised agricultural services and livestock sciences. The centre costs Rs. 6 lakhs and the State proposes to set up such a mini centre in every district in the Fifth Plan. If the Tamil Nadu Agricultural University is expanded and consolidated during the Fifth Plan, such mini university centres can be established in the 13 districts of the State in the Sixth Plan. Meanwhile Mysore State is about to establish with the Union Government's approval a second agricultural university at Dharwar. The Union Minister justifies this by referring to the excellent work done by the Dharwar agricultural college. But that is what all agricultural institutions should be doing. Until we have the resources, agricultural universities should not be multiplied as is being done in Maharashtra and Mysore. This will only lead to falling standards as is happening in the classical universities. Another development is the IARI project to use nuclear radiation techniques to explore water use efficiency which is of particular importance for the Country and State plans in dry farming and multiple cropping. Water use management has several facets. Whereas Israel is able to use 98 per cent of its total water runoff, we let 80 per cent of our runoff into sea. Here is a simple but important water management use that we need to employ. Another facet is to measure soil moisture to ensure optimum effective use. Difficulties of measuring soil moisture in the farmers land can now be overcome by using the neutron moisture meter which not only identifies the various ways in which water escapes from the soil but also the age of water in underground acquifers. With the perennial water crisis that we face in this State and Country, the use of radiation techniques for proper water use could be a major breakthrough in our

agricultural practice and technology. Another important research effort is that of the three year old Wadia Institute of Himalayan technology which with the Geological Survey of India is intensifying its study of Himalayan glaciers. The controlled melting of Himalayan glaciers can importantly influence our programmes of irrigation, power production and flood preservation. A further research project—the 10 year deep sounding seismic research project—was inaugurated in December at the National Geological Research Institute in Hyderabad. The project aims at studying the structure of the earth's crust, the geological principles of formation and distribution of our ores and the location of deep seated faults and various fault blocks as an input in planning earthquake proof river valley projects, bridges and cities. The project is starting with the 600 Km profile from Karali to Udipi. Further to the programme in space sciences referred to in Vol. II No. 8 (page 28) and No. 10 (page 24) of the Bulletin, the chairman of ISRO reports that the launching of an Indian satellite with our own rocket will now take place in 1979 and not in 1974. The reason for this slowdown is the isolation and distance from the mainland of the launching site, Sriharikota, the delayed delivery schedules of our producing units from within the Country and delays in obtaining components from the US and Japan. The programme to build our own 250 kilo satellite which is to be launched by Russian launch facilities is on schedule. The compensation for the delay is that in place of an Indian 30 kilo satellite to be launched by a SLV-3 rocket, we will be gaining experience in building a rocket 8 times that size and learning from the Russian launching experience. Here again our main bottleneck is resources and the delay imposed by these limits and our poor planning.

Health: The State leads the Country in implementing family planning schemes. In the first 8 months of 1972, 1.35 lakh men and 20,000 women have been sterilised. Even so the State has long way to go, as pointed out during the Family Planning fortnight, to bring down its birth rate to 22 per thousand by the end of the Sixth Plan as envisaged by the State Planning Commission's health plan. On this occasion of the national planning fortnight during the second and third week of December, the Prime Minister came out with a clear message to the Country in stating that the Country's production and national wealth must grow much faster than population. For this people must understand that if they had smaller families, they could ensure better health, better education and better living levels for their children. Both in the State and the Country this acceptance of the small family which is now spreading among the upper and middle classes must also be accepted by the poor majority of the Country, as part of the effort to raise them above the poverty line. In this connection, the Union Government has constituted a committee on socio-economic studies in family planning under the chairmanship of Dr. V.K.R.V. Rao with eight members from the social work, medical and family planning fields and the Director of the National Institute of Family Planning as member-secretary. The committee should help in drawing in university resources for studies in family planning and demography and should develop a few advanced pace setting centres to guide the practitioners of this important national programme. On the occasion of the 32nd annual conference of the Association of Surgeons held at Kanpur at the end of December, the potential contribution of surgeons to the family planning programme was highlighted. If the birth rate is to be reduced to 25 per thousand by 1980 (which in-

volves a reduction of 1.5 per thousand per year), it would require that 15-20 per cent of the Country's surgeons should devote their time to it. At present just 2 per cent of the surgeons are so involved. This marginal participation of surgeons in the programme, despite their under-employment, is due to their not being confronted with the challenging task, the lack of tools and supporting services for their effective use and what is described as "the political-bureaucratic" factors inhibiting the progress of surgery in the Country. The effects of this situation are that semi-trained, non-surgical personnel, are used to perform the operations, leading to complications after operations and loss of confidence and acceptability of the programme. The family planning imperatives are clear—the birth rate must be reduced to 25 per thousand by 1980, if the Country's development effort and anti-poverty battle are to succeed. For this sterilisations are the main instruments. The 1970 experience of 9 million sterilisations and 4 million IUCD insertions showed that each sterilisation prevented 1.5 live births as against 0.5 births prevented by IUCD and 1.15 by conventional contraceptives. The programme should now attract and use our surgeons in this programme in such a way that one of every five surgeons spends the equivalent of 2 years time on this programme. The surgeons are willing to do this. It is for the government and voluntary agencies, engaged in the programme to mobilise their services. One successful voluntary programme, the UPASI comprehensive labour welfare scheme, has recently conducted an evaluation of its scheme at Coonoor. The scheme is aimed at effecting all round improvement of the working family in the plantation industry, of which the regulation of the size of the family is one important element. The methods employed in the three project estates, Glendale, Bengorm and Parkside, were to motivate the target groups from the management to the workers and to vary the style and content of the programme from group to group. A no birth bonus scheme provided for women workers in the age 17-45 to join the scheme under which each is credited with Rs. 5 per month in a savings account. After 2 children, she loses Rs. 50 for a third child, Rs. 250 for the fourth child and all her savings for the fifth child. The results noted were that the workers aspirations were the same as those of any other group, the dominant attitude pattern of each group was one of cooperation and sustaining interest, the business community is not fully involved in this effort and the need to improve coordination of medical practices to establish uniform standards. 719 women workers or 91.7 per cent of those eligible participated in the no bonus scheme. The scheme did not attempt to restrict maternity benefits as that roused Union opposition. Family Planning was only one of the nine elements, which included preventive medicine, craft training, social education, nutrition, etc. Here is a successful effort among the group—the working class—which is still largely outside the family planning programme.

The State is proceeding to implement and ready itself with regard to the Health Plan proposed by the State Planning Commission. District and Taluk headquarters hospitals are being equipped with the specialists recommended by the Plan. Also the Plan provision not to proceed now to ending private practice by doctors in service mainly because of financial constraints has been accepted. The government is posting one indigenous doctor for every 5,000 people in the rural areas in accordance with the report in the last issue of the Bulletin (page 42). The whole question of the adequacy of doctors and

their willingness to serve in rural areas needs further study for the Country. For the State, the Plan provides clearly on both these points. After West Bengal (25,761) and Maharashtra (23,186), this State has *the largest number* of doctors (19,096) and by the *middle of the Fifth* Plan will have enough to ensure 1 doctor to 3,000 people as recommended by Heal Plan. *For the Country, unemployment* doctors *is increasing, from 2,497 in 1970* 3,953 in 1971. In States like Bihar and Utt Pradesh, there is need to create conditior in the rural areas which will attract doctor to work there, as is being planned in th *State*.

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V. Employment

The National Sample Survey conducted an employment survey in 9,888 villages *in* order to help in determining the precise level of unemployment in rural areas and *the reasons for it*. This is important as since *1966 there is no* official computation of the total number of unemployed in the Country. The State Planning Commission *is planning* to undertake a similar survey *in the* Chingleput district to provide a firm basis for employment generating programmes in the State. In all the discussions and analysis of the massive unemployment and under employment problem facing the Country, the essential point *made by the* Director General of ICAR at the convocation of the Tamil Nadu University and by the seminar paper published in this issue is usually forgotten. The Country's greatest biological asset is its large population, particularly its youth. Instead of treating this as a burden which employment statistics and analysis tend to do, if they could be *treated as* capital—plentiful in supply—to be *mobilised* and employed in national development. the employment dimension will take on a different flavour. If youth were mobilised as they are in China or Ethiopia or in Netherlands (instead of being released from schools and colleges when *the* agricultural season is ended), there could be a *considerable* increase in the output of our crops, farm animals, fisheries, water management *and soil* conservation. In this context higher labour *productivity* can also be an important *factor of increased* output and employment provided labour is involved and motivated in productivity *programmes*.

Unemployment among scientists on the basis of data reported by live registers of employment exchanges which can be compared with CSIR analysis of the 1971 census on this subject as reported in Vol. II No. 9 (page 37) of the Bulletin, shows a similar increasing trend. In absolute terms, taking the CSIR census of scientists in the Country at 4.5 lakhs *in 1971*, 21 per cent of them are unemployed. In December 1971, the live registers reported that 1,09,303 scientists (99,189 graduates and 10,114 post graduates) were seeking jobs. This compares to 38,000 scientists who were seeking employment at the end of 1968, 52,000 at the end of 1969 and 76,000 at the end of 1970. The main cause is the stagnation of our economy, its rate of growth being not even half the rate of expansion of science, the increase in the number of universities offering science

courses from 45 in 1960-61 to 95 in 1969-70, and to 1.26 millions in 1973-74. The increase in science unemployment in the State shows that after West Bengal, Tamil Nadu is in the second worst position increasing from 4,100 in 1968 to 12,400 in 1971. The government announced in the legislature in December that as of March, 31, 1972 the total number of unemployed who were educated upto SSLC was 3,94,030. This figure is increasing every month. The government is operating special programmes to employ the educated unemployed. As noted earlier, from 1 August 1972, 900 BT teachers have been employed. A sum of Rs. 28.30 lakhs has been approved by the legislature in the second supplementary demand for training further 200 technically qualified persons, constructing 43 sheds in industrial estate and providing technicians with machinery through SIDCO. Under these conditions it is questionable if the scientists who are working gainfully abroad should be attracted back home for the present. In CSIR survey of the returned scientists, it was found that 4 percent of them regretted their return and 50 per cent regret it sometimes, primarily because working facilities are limited here at home. This is compensated by their parental or family attachments. The major issue now is to get the economy moving to employ this highly skilled manpower. In fact, to get the economy moving, much preparatory work is needed—resource surveys, feasibility studies, engineering surveys, etc. and these if well planned as proposed by NCST can ensure using this valuable science resource of the Country.

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VI. Other Items

American Library, Madras, and the International Book Year: On the occasion of the International Book Year, the American Library, Madras celebrating its 25 years of service to South India organised in December 1972 a book exhibition and a 5 day seminar on the Library. One of the good sessions was that led by Professor Neelameghan, Director, Documentation and Research Centre, Bangalore on social change and the public library. It was an occasion when the library situation in the South was reviewed and plans for providing a more effective service discussed. The programme for this State is set forth in the Education Perspective Plan. The world accomplishments of the International Book Year were reviewed by the Unesco committee for the year. The committee considered that International Book Year had in large measure achieved its objectives: (a) use of books in the service of education, international understanding and peaceful cooperation; (b) encouragement of authorship and translation, with due regard to copyright; (c) production and distributing of books, including the development of libraries; and (d) promotion of the reading habit. It drew particular attention to ten major accomplishments during 1972; (1) one hundred and thirty countries drew up and executed national programmes for the International Book Year. (2) Major impetus was provided for book development through the establishment of national institutions for book promotion in more than seventy countries. (3) Chiefs of

State as well as Prime Ministers, Ministers of Education, Culture and Information actively supported the objectives of International Book Year, and press, radio, television and cinema provided unprecedented coverage of the world of books. (4) Book fairs, exhibitions, seminars, lectures as well as posters (70 countries) and International Book Year postage stamps (50 countries) stimulated massive public participation in the Year. (5) Professional organisations of the book world—authors, translators, publishers, librarians, book sellers, documentalists, etc.—under the impetus of International Book Year were united as never before. (6) New attention was focused on the content of books as a means of promoting education, international understanding and peaceful cooperation. (7) There was increase in production, distribution and use of books, and authorship and translation were encouraged through prizes, workshops, seminars and other means. (8) Thousands of new libraries were established and services to readers were improved. (9) Campaigns to promote lifetime reading habits were expanded throughout the world. (10) A Charter of the Book was drawn up and adopted by professional organisations and received wide support by the international book community. The year was for all countries a refreshing intellectual and cultural event.

Lions International Regional Conference, Devakottai: On December 10, right in the midst of the havoc caused by the floods, Devakottai in Ramanathapuram organised the Lions International Regional conference covering five districts in the southern part of the State. The conference provided an opportunity to its many members to discuss the Fifth Plan perspectives of the Country as set forth in the approach paper on which a detailed comment was provided by Dr. Malcolm S. Adiseshiah. It also was an occasion when the clubs exchanged information on plans for serving the community, particularly in view of the effects of the floods. In fact a car journey leaving Devakottai on the 10th at 3 p.m. and travelling through Karaikudi, Pudukottai, Tiruchirappali, diverted to Tirukoillur, on to Ulundurpet, Chinglepet and arriving in Madras at 3 p.m. provided a first hand experience of the destruction of houses on the river banks, the washing away of bridges, the breaches in the roads and the vast areas of crop inundated under flood waters. The flood relief and rehabilitation programme was already under way all along the route under the direction of district collectors and officers, with the willing cooperation of the people.

Southern India Chamber of Commerce and Industry: The Chamber organises a quarterly meeting at which subjects of interest to the industrialists in the State are discussed. At the first quarterly meeting on December 15, Dr. Malcolm S. Adiseshiah read a paper on Tamil Nadu Fifth Plan perspectives, which appeared as the second article in the last issue of the Bulletin. Discussion was concentrated on the prospects of simplifying and streamlining the control and licensing procedures for medium industries in the State along lines of the recommendations of the sub committee referred to in Vol. II No. 12, (page 28). of the Bulletin. Another area which invited interest was the proposal for a mass distribution network of wage goods. The problem that aroused discussion was the means of bringing the prices of such goods within the means of the lowest rung of the poverty sector.

Andhra University, Waltair: Andhra University is engaged in an important and pioneering programme of self evaluation at the instance of its Vice-Chancellor Mr. L. Bullayya and with approval of its syndicate. Each department has answered a detailed questionnaire prepared by a

meeting of faculty heads concerning its present organisation and teaching and research work, its problems and limitations and the way forward for the Fifth Plan. The Vice-Chancellor has invited three committees—Natural Sciences headed by Dr. Nag Chowdhry, Human Sciences headed by Mr. G. Parthasarathy and Social Sciences headed by Dr. Malcolm S. Adiseshiah to meet with the departments concerned, examine the self evaluation material and establish a report which would be a guide to future development of the University. The Social Sciences committee consists of Dr. K. N. Raj (Economics), Dr. M. S. Gore (Sociology and Social Work), Dr. M. N. Srinivas (Sociology and Anthropology), Dr. S. P. Adinarayan (Psychology), Dr. Ravi Mathai (Management), Dr. L. M. Singhvi (Law) and Dr. Rashidin Khan (Political Sciences). The three committees will complete their work by March and present to the Vice-Chancellor their recommendations on the Fifth Plan development. This is the first university that is undertaking such a critical analysis of its academic work which is already at a high level of excellence and which will lay the basis for long range university developments.

Public Relations Society : The Public Relations Society of India organised a National Seminar in Madras in December on Public Relations for managerial effectiveness. The subjects covered in the seminar included communications, education and training, the challenge of change and growth and development of public relations. Among the papers discussed were those presented by Dr. Ashish Bose, Fellow, Institute of Economic Growth and Dr. Malcolm S. Adiseshiah on the challenge of change. The main point made was that in the coming years the public sector will expand while the private sector will contract, though in absolute terms the size of the private sector will still be large and decisive. This change, along with those looming on the social and political horizon, calls for developing programmes of perspective planning for change and introducing change through the efforts of the public relations officers.

Mat-Science : The Institute of Mathematical Sciences, Adyar, celebrated its 11th Anniversary in December/January by releasing its Director, Professor Alladi Ramakrishnan's most recent publication "Matrix Theory or the Grammar of Dirac Matrices" which was the product of over two decades of mathematical research. The Institute and its staff have earned international reputation in the quality of their research. It organised from January 1–7 an international conference on functional analysis and its applications, in which 51 distinguished mathematicians from Europe, North and South America, Asia, Australia and New Zealand along with 20 Indian mathematicians participated. Mr. C. Subramaniam, inaugurating the conference called attention to the importance of applied mathematics at the present stage of the Country's development. Dr. Malcolm S. Adiseshiah, delivering the presidential address referred to the commitment of the scientists to fight poverty—as the major call of the Country's Fifth Plan.

ICSSR Review Committee : The constitution of the Indian Council of Social Science Research provides for a periodic review of its work. The Council will be completing in 1974 five years of work and has invited Dr. Malcolm S. Adiseshiah to constitute a committee of 7 members. Terms of Reference. The terms of reference of the Committee are: (a) to review the current status of social science research and its future directions; and (b) in the light of its findings, to evaluate the work

of the ICSSR in the last four years and to indicate the lines on which it should be developed in the Fifth Five-year Plan.

The members of the committee are:

(1) Dr. M. S. Adiseshiah (Chairman)

(2) Prof. D. T. Lakdawala

(3) Dr. Kamala Chaudhuri

(4) Dr. Nitish De

(5) Prof. S. C. Dube

(6) Shri V. B. Singh, M.P.

(7) Shri Abel (Member–Secretary)

The secretariat of the committee has been set up in the Madras Institute of Development Studies. The committee is consulting social scientists by means of a detailed set questionnaires. It plans to meet with groups of them and establish its report by September on the past performance of the Council and its future direction in light of the development needs of social sciences in the Country.

January Madras Development Seminar: The January seminar paper, Framework of a Plan to abolish poverty, by Dr. C. T. Kurien, Professor of Economics, Madras Christian College, Tambaram, along with a summary of the discussion at the seminar chaired by Mr. M. S. Appa Rao, Business Management specialist, appears as the first article in this issue.

Second Article: A paper on functional science appears as the second article in this issue.

Book Review: A review by Dr. Gopal, Director, National Institution of Nutrition, Hyderabad, of the Institute's third publication, Nutrition in Tamil Nadu by Dr. Rajammal Devadoss, appears in the Book Review section.

FRAME-WORK OF A PLAN TO ABOLISH POVERTY

By

DR. C. T. KURIEN,

Prof. of Economics, Madras Christian College, Tambaram, Madras-59.

I. Introductory Note

When this paper was written in October 1972 to form the basis of a discussion in one of the Working Groups of the State Planning Commission it was accompanied by another paper with the title "What is Growth?" as a theoretical appendix. Because of the technical nature of the discussion in that paper it is not being reproduced here. (It has subsequently been published in the *Economic and Political Weekly*, December 23, 1972) However, a brief reference to the substance of that paper is necessary to appreciate the procedure I have adopted in the present one.

It is now the official doctrine of the Planning Commissions both at the Centre and in the State that the primary purpose of planning is to achieve a specified rate of "growth". This does not necessarily imply any attachment to growth as such. On the other hand, it appears very reasonable to suggest that in a poor country like India increase in production and acceleration of rate of growth are necessary preconditions for the universally accepted objective of eradicating poverty. In the nitial stages of planning we seem to have ccepted the corollary of this approach lso, that growth itself will eradicate overty. What is new, of late, is the re-gnition of the fact that growth does not rcolate enough, in the short run at any te, to make any visible dent on poverty, d that therefore it is necessary, along h the emphasis on growth, "to attack in selective manner the worst form of poverty". The new strategy, thus, is a "growth plus" strategy.

I believe that if our real objective is the eradication of poverty, the "growth plus" strategy is no improvement over the "mere growth" strategy. This is for two reasons. First, the nature and extent of poverty that we confront are very different from what is fashionably identified as "poverty" in some other parts of the globe. A situation where some 50 to 60 per cent of the total population lives below a *physiologically* tolerable level of existence does not appear to have a parallel anywhere else in the world or at any other time in history. Our poverty, therefore, is a unique phenomenon. Secondly, (and this was the burden of my paper on Growth) there is no such thing as "production" and "growth" in the abstract. What is produced is not an unspecified "output", but different kinds of goods. Only if there is a common valuation procedure for these different commodities can they be aggregated into an abstract "output" whose rate of "growth" can be precisely evaluated. Such a valuation procedure is intrinsically a social phenomenon. When these values are established by the market, the values of goods will depend on the intensity of demand for them, which in turn will depend on the ownership pattern of resources in the economy. If so, in a basically market-oriented system like ours

where the vast majority are poor and a few are rich unspecified "growth" can only be to the advantage of the rich in the sense that the pattern of production will be geared to the production of goods that they can command.

If poverty is to be abolished. therefore, it is necessary to change the existing pattern of production and to establish a new pattern whereby the goods needed for mass consumption are produced by the masses themselves. Consequently, if the vast majority of the people are "poor" (in the Indian sense of not having even a per diem calory intake of 2200 per capita) a plan to abolish poverty cannot be one which merely attempts to increase output in the various "sectors" of the economy, but one which identifies the poor in terms of worker categories, in particular localities. and mobilises them along with the non-human resources of the economy to produce the goods necessary to banish their poverty. It is in this sense that my approach differs from those of the Planning Commission.

One final word. Planning in our country has led to a surfeit of terminology of a bewildering variety. It is common now to talk about "Approach" documents and "Pre-approach" papers, for instance. My "Frame work" paper belongs to a stage even prior to the "Pre-approach" one! It is the result of the thinking of one individual, put together in its present form rather hurriedly to suggest the need for a different approach to planning and to indicate the major outlines of that approach. This is not an apology, but a warning against pre-occupation with details.

II. Summary

1.1. THE CHIEF ASSET of Tamil Nadu is its population of 41 million people. The main problem of Tamil Nadu is that possibly 25 millions of them live in conditions of abject poverty. The objective of the plan for which a framework is provided here is to remove this poverty as early as possible by mobilising the people and the physical resources of the State.

III. Poverty in Tamil Nadu

2.1. The Draft Perspective Plan Frame for Tamil Nadu 1972-1984 mentions that "sixty per cent of the people of Tamil Nadu are estimated to be living on or below the poverty line. Their daily food consumption ranges from 1,000 to 1,800 calories ... They live in urban slums or rural huts with little access to health or hygienic facilities." (para 1.3).

2.2. There have been two other recent estimates of poverty in Tamil Nadu undertaken by the State Planning Commission's Secretariat. Using the norms laid down by the Expert Committee of the Central Planning Commission in 1961, these studies use a per diem intake of 2,200 calories to draw the poverty line and have converted this norm into a per capita monthly expenditure of approximately Rs. 33 at today's prices (the equivalent of Rs. 20 in 1961). On this basis and making use of the National Sample Survey data on consumption patterns in Tamil Nadu, both estimates show that 52.5 per cent of the people in the State live below the poverty line.

2.3. Basing oneself on these estimates, it may be concluded that between 22 and 25 million people in the State come below the poverty line in the State today.

IV. Identification of the Poor—Occupational

3.1. To evolve a strategy to tackle this problem of mass poverty, it is necessary to identify the poor both in terms of their occupational structures and their geographical location.

3.2. First, we may convert the 22 to 25 million poor people into worker-equivalents. The total number of "workers" in the State according to the Provisional Totals of the 1971 Census is 15.07 millions. Thus, the participation ratio is 15.41. If this same ratio is applied to the 22 to 25 million poor people, they can be converted into about 8 to 9 million worker-equivalents. On the reasonable assumption that there are more workers among the poor than in the population as a whole, this may be considered to be a low estimate. Still it accounts for some 53 to 60 per cent of the total workers in the State. Possibly 10 million worker-equivalents will be a closer estimate representing, say, two-thirds of the workers in the State.

3.3. The 1971 Census divides "workers" into three categories, "Cultivators," "agricultural labour" and "other workers". The poor in worker-equivalents may now be divided into these groups. In the absence of any definite information in this regard, we have to make certain assumptions to proceed with the identification. It is assumed that cultivators who operate on land of less than 2.5 acres will come below the poverty line. The assumption is based partly on the usual procedure of identifying those cultivating below 2.5 acres as "small cultivators" because the net earnings of a family cultivating 2.5 acres may be taken to be less than Rs. 1,500 per annum which will bring them just slightly above the poverty line. Another reason for taking 2.5 acres as a norm is that, in most studies of land holdings, the lowest size classes are expressed as below 1 acre and between 1 and 2.5 acres and because it is felt that familial earnings from an acre of land will be way below what is recognised as the poverty line. It is conceded that accepting 2.5 acres as a bench mark is too sweeping a generalisation, but it indicates a procedure that can be adopted to identify the poor among the cultivators in terms of the operating unit of land, yield and price of output when these data are available. Details regarding the size distribution of land in the State were not readily available and hence to estimate the number of cultivators having less than 2.5 acres of land, the 20 per cent sample reported in the Census Report of 1961 has been relied upon (Census Report 1961 Vol. IX. Madras, Part III, Table B XII). According to the sample, 275,093 cultivators out of a total of 584,330 had less than 2.5 acres of land. The Census of 1971 (Provisional Totals) has estimated that, among the total workers, 4.6 millions are cultivators. Using the 2.75/5.85 fraction from the 20 per cent sample in the 1961 Census Report, it is estimated that 2.15 million cultivators in the State $4.6 \times 2.75/5.85$ have less than 2.5 acres of land. These are considered to be one component of the poor in terms of worker-equivalents.

3.4. The Census of 1971 (again Provisional Totals) gives a figure of 4.3 millions for agricultural labourers in the State. It is assumed that all of them came below the poverty line. Hence this is the second component of the poor in terms of worker-equivalents.

3.5. There are 6 million "other workers" in the 1971 Census Report (Provisional Tables). This is a very heterogeneous category and processing it in any meaningful manner is not easy. But Tamil Nadu : An Economic Appraisal, 1971 mentions that there are 1.5 million workers in the "Organised sector" (public and private sectors together) in the State. It is assumed that all of them are above the poverty line and that all others are below the poverty line. Among the "Other Workers" category, those who do not come under the "organised sector" consist

of petty traders, manufacturers and those in various forms of service industries. Not all of them will come below the poverty line. But in the present "quick estimate", we are making the assumption that they do. Hence in the "other workers" category we estimate 4.5 million worker-equivalents (6 million minus 1.5 million) to be poor.

3.6. Thus we arrive at a total of 10.95 million worker-equivalents as the poor in the State consisting of 2.15 million small farmers, 4.3 million agricultural labour and 4.5 million other workers. This is higher than the total of 8 to 10 million arrived at in para 3.1 mainly because of the very inadequate procedure used to identify the poor among "other workers".

3.7. On the basis of these calculations it may be said that approximately 21 per cent agricultural labourers and 40 per cent other workers consisting of petty traders, manufacturers and service agents. Such an identification also gives some clues about the location of the poor which is taken up for more detailed examination in the next section.

V. Identification of the Poor—Locational

4.1. The two estimates referred to in para 2.2, while agreeing on the State figure, have rather widely differing figures for the rural and the urban distribution of the poor. According to one of them 64.5 per cent of the rural population and 35.5 per cent of the urban population are below the poverty line, whereas the other shows that 56 per cent of the rural population and 50 per cent of the urban population are poor. Using the conversion ratio given in para 3.2 and making use of the figures for urban and rural population in the State in the Provisional Totals of the 1971 Census, the rural-urban distribution of the poor in terms of worker-equivalents will be as follows:

TABLE II. 5 FOUR

POPULATION: RURAL AND URBAN

(IN MILLIONS)

			Rural	*Urban*	*Total*
Estimate	1	...	6.7	1.6	8.3
Estimate	2	...	6.0	2.3	8.3

4.2. In the *occupational* grouping made in para 3.6, it will be reasonable to assume that small farmers and agricultural labour are in the rural areas. Thus, according to the occuptional grouping, 2.15 million small farmers and 4.3 million agricultural labour making a total of 6.45 millions are in rural areas. This is fairly close to the estimates arrived at in para 4.1. But when we come to the urban figures, the estimates differ widely. We must presume that the vast *majority* of the "other workers" category lives in the urban areas. If so, most of the 4.5 million "other workers" must show up in the urban centres. But both the estimates in para 4.1 show considerably lower figures, thereby confirming the doubt expressed earlier that the figure of 4.5 million "other workers" as poor is an overestimate because of the *inadequacy* of the method used as *explained* in para 3.6.

VI. Distribution of the Poor According to Districts

5.1. In terms of the data that were readily available, it has not been easy to arrive at the district-wise distribution of the poor. But it is in the essence of the kind of anti-poverty programme envisaged in this paper that needs and resources be located in as specific terms as possible. Hence an attempt has been made to estimate a district-wise distribution of the poor. It is very important to note that the procedure adopted for this purpose is very crude indeed and must be dispensed with as soon as a more acceptable method is arrived at. The details of the method used will show its limitations. Once again it may be said that what is important here is not the numbers arrived at but the fact that a district-wise estimate of the poor is necessary for a proper planning procedure.

5.2. What makes our methods so crude is that we are using for the district the same procedure adopted for the State as a whole, but in terms of the information available for the districts. The basic procedure is the occupational classification described in paras 3.3 to 3.5. And the primary data come from the district figures of occupational categories as seen in the provisional totals of the 1971 Census. For calculating the number of poor cultivators we have continued to take 2.5 acres of land as the base line, i.e., inter-district variations in productivity are completely ignored. The 1971 Census figures of cultivators is multiplied by the proportion of the total cultivators below the base line in each district derived from the 20 per cent sample of land holdings in the 1961 Census Report. All agricultural labourers are assumed to be below the poverty line. To arrive at the poor in the "other workers" category, the figures for "other workers" in the organised sector in each district obtained from statistics on the State's employment) is deducted from the Census figure for the total of "other workers" in each district. The breakdown of the poor in each district derived by using this general method is given in Table I.

5.3. According to the Table the poor in terms of worker-equivalents total 10.6 millions which is very close to the estimate for the State of 10.95 millions (and the City of Madras has been excluded from the district calculations). Further, it is seen that the poor in worker-equivalents range between 64.5 (Nilgiris) and 86.3 (Kanyakumari) per cent of the total workers. It must be repeated that too much of reliance cannot be put on these magnitudes in view of the limitations of the method involved. But the various estimates we have attempted indicate the order of magnitude of the poverty problem that the State confronts after 25 years of independence and two decades of planning.

5.4. In terms of policy implications, the more important consideration is the variations in the composition of the poor in the different districts. It may be recalled that for the State as a whole 21 per cent of the poor are small farmers, 39 per cent agricultural labour and 40 per cent petty traders, manufacturers, etc. In the districts small farmers as a percentage of the poor range between 3.9 (Nilgiris) and 29.9 (Tiruchirappalli). Agricultural labour varies between 11.6 (Nilgiris) and 51.8 (Thanjavur), and others between a low of 25.4 (South Arcot) and a high of 84.3 (Nilgiris). The Nilgiris district appears to be a peculiar case in many of these respects. This is explained by the fact that the district has a very high percentage of "other workers" because estate workers are included in that residual category as they do not come under the Census classifications of "cultivators" or "agricultural labour". Even excluding Nilgiris there is considerable difference in the profile of

poverty among the districts. Thus the poverty problem in South Arcot, Thanjavur, and Tiruchirappalli is predominantly agricultural, whereas Coimbatore, Tirunelveli, Kanyakumari, Ramanathapuram and Chingleput *may be said to* have a special problem of the poor *in the* non-agricultural sector. Similarly, in Thanjavur, Madurai, South Arcot, the main problem is that of agricultural labour (with Coimbatore joining the list) while in Tiruchirappalli, North Arcot, the problem of the small farmers deserves special attention South Arcot and Ramanathapuram districts will also come into *this list*). Such general observations are perhaps more helpful from *the point* of view of policy prescriptions than the quantitative specifications of Table I.

VII. Policy Considerations

6.1. Mass poverty of the kind that exists in the State (and in *other* parts of the Country) has two visible aspects. The first is the inadequate availability of essential goods to those who are poor as indicated by the fact that the per diem calorie consumption of those who are below the poverty line is only between 1,000 and 1,800 compared to the norm of 2,200. The housing facilities available to them are *also* far from adequate. Similar deficiencies may be pointed out with respect to drinking water, clothing and medical facilities among goods for private consumption and education among goods for social consumption. A detailed listing of these deficiencies in terms of general *norms is* necessary as a pre-condition for any plan to tackle the problem of poverty. In preparing such a list, it has to be borne in mind that the inadequacies and the norms themselves may differ from situation to situation. Food may be the major deficiency in the case of agricultural labour, whereas housing may be the main problem in the case of petty traders and manufacturers, especially in the urban areas.

6.2. *But* a bill of goods *indicating* inadequacies in the existing pattern and *consequently the magnitude of* requirements to make good the deficiencies is *only one* aspect of the poverty problem. A second and equally important aspect of the problem is the tremendous waste of *human potential not* only as a consequence, but as a cause—one must say, the most important cause—of poverty. Mass poverty exists because the mass of the people do not, and under the circumstances cannot, contribute to productive activity, and hence have become a drain on *the economy by existing* as cosumption agents to the extent that they do consume. If this aspect of the poverty problem is appreciated it will be obvious that there can be no solution to the poverty situation except through activating the vast idle human resources that the economy grudgingly *tolerates at the moment*. *From this* it will follow also that no attempt to increase the output of the required bill of goods through processes that do not involve the animation of the latent human potential can be an effective *solution to the* problem of mass poverty.

6.3. *Consequently a plan to abolish poverty must be an attempt to reorganise the economy to produce the goods for mass consumption by the masses.* And because needs and resources differ, the *plan has to* be designed and executed specifically in terms of resources, needs and locality. It is, therefore, in the very nature of an anti-poverty programme that it cannot be spelled out in terms of global aggregates such as the required rates of growth, the necessary quantum of investment. This imposes some formal limitations of the planning procedure, but in terms of an actual plan for implementation, it is the strongest point in an anti-poverty plan.

6.4. Hence what can be attempted in a document that only proposes to outline a

plan to abolish poverty is not to spell out detailed programmes but to indicate the overall strategy. The overall strategy is suggested by the general contours of the problem itself as detailed in the earlier sections of this paper. But it requires and can be given some elaboration.

6.5. We have identified the poverty problem *in terms of worker categories*. This is because of the belief that, of the two aspects of poverty mentioned in paras 6.1 and 6.2 above, it is the latter that is more important from the operational point of view : an anti-poverty plan is basically a production-oriented plan. A new pattern of production to abolish poverty calls for a three-fold thrust— changes in the distribution of the physical resources, new forms of production organisations and new directions to demand. These are obviously inter-related aspects. It is necessay to understand their inter-relationship and thereby the basic logic of an anti-poverty plan. Mass poverty, i.e., the non-utilisation of human resources for the production of basic goods required for mass consumption, is the result of a certain pattern of the distribution of non-human resources, and the composition of demand and production organised related to it. Where the non-human resources, are heavily concentrated in a few hands, the demand generated in the economy will be for the goods that the rich require and economic organisations will be geared to produce those. Such organisations and techniques of production do not usually utilise the human potential of the economy on a scale that is warranted and possible. This, briefly, is the outline of our problem. Consequently an anti-poverty programme can be made effective only by deliberately reshaping the existing pattern.

6.6. Some possibilities in our context and their ramifications must now be taken up for consideration. The most obvious case is *land reforms*. Land ceiling laws are already in the statute books and some of them are being implemented also. But the land ceiling legislation can have the desired effect only if new organisational patterns are evolved to make use of the surplus land. Redistribution of land for the sake of redistribution is not likely to make much of a dent on poverty if small *individual holding of land* is to be continued as the norm because as has been noted already small cultivators constitute a fifth to a fourth of the poor in the State. A new type of organisation that needs to be evolved is joint cultivation—either through co-operatives or collectives—of the surplus land obtained through the enforcement of ceiling legislations. In our context what we need are co-operatives or collectives of small groups of farmers—possibly 10 to 25 of them—coming together for mixed farming, consisting of cultivation, dairy farming and poultry-keeping. The new organisational pattern must thus look into both the technological and economic aspects of the problem. A crucial point here is to find out the minimum size of a viable mixed farming unit in the different districts.

6.7. A second example is the direct utilisation of idle manpower in the rural areas. We have had and continue to have rural work programmes of various sorts, but most of them organised by public works department on an ad hoc basis. But in districts, where a large section of the poor consists of agricultural labour, a new organisation that will be required is a quasi-permanent District Work Squad which offers opportunities of work to anybody who wants work. It should be possible to have a Work Squad consisting of a core of permanent workers supplemented by casuals. Payments could be made partly in kind and partly in cash and a portfolio of work at the district level can be planned to make effective use of

the members of the Squad. It is important to organise the work keeping in mind both private and public benefits. Use of labour for the construction of houses for the rural households and the construction of facilities for rural water-supply, for instance, can often be taken up together. And the material for these construction activities can come from the localities concerned to a large extent and the means of payment can also be obtained from the same localities in terms of procurements from the larger farmers.

6.8. A third example is in terms of activating the "other workers". Mass exodus of population from rural areas to urban centres gives the lie to the oft-repeated cliche that our people are conservative and will not give up rural surroundings and habits easily. Hence, if work opportunities are provided in small towns close to rural areas, it will be possible to take people off land and put them into productive activities of other kinds. The location of large industrial complexes will have to be viewed, apart from other considerations, also in terms of the ancillary activities they will generate for "other workers" in the unorganised sector. And new townships must be planned to provide work opportunities to those who can make use of their resources —human and material—with minimum support from other agencies. Many such townships have sprung up during the sixties in the State particularly in the Coimbatore and Chingleput districts. The unplanned emergence of such new and small towns has in fact been the special feature of the urbanisation process of Tamil Nadu during the past decade.

6.9. Programmes of this kind raise two further issues. The first is related to the availability of physical resources for them. These must be mobilised from the State itself and from outside wherever necessary. The principle that lies behind it is a carefully worked out allocation of physical resources—steel, cement, electricity, etc., —giving top priority to the projects in the anti-poverty planning programme. Working out such an allocation pattern is the main aspect of State-level planning which must accept as its primary task the co-ordination of the local-level projects. This sort of allocation, it must be noted, cannot be left to the normal channels that now exist in the economy. If reliance is placed on normal channels, construction material will flow only into luxury apartments and theatres, not to rural water-supply schemes or housing projects in small towns. Hence physical restrictions will have to be imposed on construction and investment schemes that have low social priority. The second aspect pertains to the direction of demand. If wealth and incomes are allowed to grow unchecked, it will be difficult, if not impossible, to direct physical resources into socially necessary channels because private demands will become too powerful to be curbed and directed. Hence limits on wealth and income are necessary parts of any anti-poverty programme. Also, unless a deliberate effort is made to channel normal demand into goods produced by the masses, such production will die off or turn sluggish for want of effective demand. The clearest example in our case is cloth where an organised effort will have to be made to encourage the use of goods manufactured by the masses in preference to those produced by wealthy competitors, individuals as well as companies.

VIII. Some Concrete District Programmes

7.1. In the light of the general discussion on the preceding section, we may outline a few concrete programmes in particular districts. Thanjavur and South Arcot districts may be considered together as they have many features in common.

Both are traditional paddy districts and have exceptionally high densities of rural population. And as seen from Table I, the bulk of the poor in these districts are among the agricultural labourers. Another common feature of the districts is that these labourers belong, by and large, to the scheduled castes. The poverty problem in these districts, therefore, has a deep socio-economic basis. It should be possible to organise a Work Squad in these two districts for various reasons. The agricultural labourers in South Arcot get very low wages and there is a well established rural exodus pattern from South Arcot into the City of Madras and the neighbouring towns in the Chingleput district. There is considerable scope for rural work in both South Arcot and Thanjavur especially in the latter where the road system is one of the poorest in the State. And, of course, payment in kind can be resorted to as both districts are surplus paddy producers. The siphoning off of the rural population is necessary both to relieve congestion in the rural areas and to reduce the excess supply of agricultural labour, particularly in the South Arcot district, so that agricultural waves will go up. Another aspect of the programme in these districts will have to be the acceleration of the pace of industrialisation started in the 'sixties especially in South Arcot.

7.2. As against these two districts, the main thrust of the anti-poverty programme in Coimbatore, Chingleput and Tirunelveli will have to be urban and industrial. But there is an agricultural background to the urban poverty problem in these districts. Agriculture in these districts, especially in Coimbatore and Tirunelveli, is highly commercialised. There are many large cultivators and the mechanisation of agriculture is proceeding rapidly. Hence agricultural wages also tend to be high. But the configuration of these factors push out of the rural areas landless workers who cannot find work and the vulnerable small farmers who find the cost of cultivation too exorbitant. It is this group of people who have been migrating to the developing industrial towns to eke out a living. Some of them have specialised skills. The workers employed in many brick kilns around the city of Madras are known to be from the Tirunelveli district. Since all these districts specialise in the production of a variety of commercial crops, agrobased industries located in developing or newly created small towns are eminently suitable for them. The growth of such industries and towns can be taken up simultaneously and the migrant labour can be utilised for construction purposes. Commercialisation and mechanisation of agriculture, the growth of towns and the development of industries will all generate demand for many kinds of services and skills and appropriate training programmes could prepare the unskilled rural migrants for these jobs. These districts, particularly Tirunelveli, also require new marketing organisation to provide an outlet for the many goods which are and can be manufactured using local materials—baskets, palm tree products, etc.

7.3. A third case woth considering is of Kanyakumari which has many special features of its own. It is the smallest district of the State and has the highest density of population, both rural and urban. It has one of the lowest proportions of the work force depending on agriculture, yet it is also one of the least urbanised districts in the State. In agriculture the size of holding is on the whole low and in paddy cultivation is largely of conventional varieties depending on well irrigation. The district has the highest average yield in paddy and generally 3 and sometimes 4 crops are raised in the year. This has led to a very high demand

for labour for agricultural *operations* which are extremely labour-extensive and the wage rate also is high. This is possibly one district in the State where a good proportion of agricultural labour may not be below the poverty line. The most vulnerable section of the population, therefore, is the group of small farmers and other workers. Because of the high level of wages, the district has not been able to attract any major large-scale industries. Hence the main plank of the anti-poverty programme here will have to be the growth of a variety of small industries to utilise the skills of those who can become self-employed manufacturers.

7.4. These are but examples of the kind of programmes that need to be and can be undertaken. The actual programmes themselves must be worked out by the districts in the light of intimate knowledge of the needs and the resources. In working out these programmes, particular care will have to be exercised to see that each household which comes under the poverty line is drawn into the production programme one way or another. If this emphasis is not given, the anti-poverty programme also can become an aggregate approach at a slightly decentralised level.

IX. Wider Aspects of the Anti-Poverty Plan

8.1. In the new approach to planning envisaged in this paper, the emphasis has necessarily been on hitherto neglected aspects and problems. But it is not suggested that an anti-poverty plan can be a mere listing of a few projects meant to activate a section of the population mainly in the rural areas. There are many formal aspects of the planning problem which must be indicated even if they cannot all be adequately dealt with in this brief paper.

8.2. The formal principle underlying the anti-poverty programme of the kind envisaged here is planning through materials balances, but with some significant differences. The chief among these differences is that an anti-poverty programme *does not have to worry* about the valuation of the objective function. The goods to be produced have already received high social valuation : i.e., society has already decided that the goods needed for the programme—food for the millions, shelter, clothing, rural water supplies, roads, etc.—must be produced and has already indicated that the physical resources of the economy will be diverted into the production of these goods. (If this social decision has not been made, there is no anti-poverty plan at all) Consequently what the programme must attempt to maximise is the utilisation of labour, and the constraints are some of the physical resources. A programme of this kind can be formally spelled out. Instead of attempting that formal exercise here, some rules of thumb may be mentioned for the choice of projects at the local level.

8.3. The first is to say that any project, whose objective has been socially approved and for which there are no physical resources constraints at the local level, may be chosen. For instance, a food production programme using the local waste lands, farm implements available in the locality and local manures should be almost automatically chosen. But even under such circumstances, there may arise the problem of choosing from among alternatives, particularly those involving different periods of time. It is possible that most of the resources mentioned above can be put to use for the construction of houses instead of the production of food. The local situation itself may decide which of these two must be taken up. Where the local situation

does not give any definite guide-lines, priority should be given to the good that is meant for more immediate consumption. The second rule of thumb is that, if there are more constraints than one (in terms of local resources), priority must be given to that project which economises on the most scarce resource (scarcity determined with reference to the social valuation of the good produced as mentioned above).

8.4. But there is no virtue in local self-sufficiency as such. Where necessary local projects experience resource constraints, such resources can be made available from outside the locality. As indicated earlier, the main objective of the second level of planning is to "align" local level plans. The first aspect of this process is to work out a trial balance of local-level surpluses and deficits. A good many of these will cancel out. But there will also be net deficits and net surpluses, which in our context can be further eliminated through a higher level of balancing (inter-State). But taking the State as the unit, one must envisage net deficits in many crucial physical resources. Direct production activity by the State must concentrate on these resources. The State may undertake the production activity directly or may pass it on to the organised private sector with appropriate specifications to see that the procedure does not violate any of the social priorities of the programme.

8.5. At this level it is necessary to think of resources both in physical and financial terms. State enterprise will alter the physical resources position and the production opportunities position in some localities. The State also will have to work through financial channels both to mobilise physical resources through purchases and to regulate the flow of physical resources in the system as a whole into socially agreed production patterns. For these it is important for the State to have ownership rights over physical resources of various kinds of as well as adequate control over the fiscal and monetary mechanism. Again, not all of this can be adequately elaborated without giving much more thought and attention to the various aspects of the issues.

X. Conclusion

9.1. There are many elements of the anti-poverty programme that remain rather vague at the moment. And some of these cannot be clarified till the programme becomes a reality in its essentials. The essentials, however, are very clear indeed. A major re-organisation of the production pattern of economy is its centre-piece. Drastic reduction in the concentration of ownership and control of the physical resources in the economy is its basic pre-requisite. A large scale mobilisation of political will in support of the programme with full awareness of its implications is the key to its initiation.

TABLE 11.5

DISTRICT-WISE DISTRIBUTION OF THE POOR IN TAMIL NADU (IN WORKER-EQUIVALENT)

Serial number and district	*Total Workers in thousands*	Percentage of poor workers to total				
		Small Farmers	*Agri-cultural Laboures*	*Other Workers*	*Total in thousands*	*Poor Workers / Total Workers*
1. Chingleput	1,016	17.9	39.2	42.7	794	78.1
2. North Arcot	1,368	25.8	38.8	35.4	1,044	76.3
3. South Arcot	1,296	29.2	45.2	25.4	1,011	77.9
4. Salem-Dharmapuri	1,834	21.7	39.3	39.3	1,221	66.5
5. Coimbatore	1,804	7.2	44.0	48.6	1,270	70.4
6. Nilgiris	192	3.9	11.6	84.3	124	64.5
7. Madurai	1,478	17.8	47.4	34.7	1,086	73.5
8. Tiruchirappalli	1,453	29.9	38.2	31.7	966	66.4
9. Thanjavur	1,301	18.2	51.8	30.0	1,037	79.7
10. Ramanathapuram	1,065	23.5	34.7	41.7	774	72.7
11. Tirunelveli	1,199	16.2	36.9	46.8	971	81.0
12. Kanyakumari	352	15.9	40.0	44.1	304	86.3
State	15,074	21.0	39.0	40.0	10,950	72.6

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Summary of Discussion

In the discussion of the paper at the Seminar in the Seminar room at the Madras Institute of Development studies on January 25th under the chairmanship of Mr. M. S. Appa Rao, Managing Director, Vijayind Publications, Madras, Dr. Kurien began with a general criticism of planning in India and Tamil Nadu and said that it is far removed from the realities in the Country. Although the need for a planned approach was recognised sufficiently early, concepts and models had not been modified to the needs of the Indian situation. The emphasis was on 'growth' as the principal instrument of desired change. What has happened in the last 22 years is only a slight change in the mechanism, the 'growth' concept remaining unaltered. It was not realised that the Western experience of percolation of benefits to the poorer sections of society took a long period of time and that the relative position of the very poor did not change till after the first world war. Moreover the levels of living in India were far lower than in the West and this strategy

of growth, income transfers and subsidised welfare expenditure could not apply, with any success, to a society where even basic necessities had yet to be met. In referring to the Tamil Nadu draft Perspective Plan Frame, he stated that it envisaged a selective attack on the worst forms of poverty. This objective is to be achieved by increased production and a distribution mechanism which would make essential goods available at fair prices and also double the per capita income in a period of twelve years. This exercise was oblivious to the fact that a direct attack on poverty could not overlook that about 60 per cent of the workers did not have the minimum intake of 2,200 calories. Therefore drastic changes in the production structure and the pattern of production were essential to secure the needed purchasing power for this group. A doubling of per capita income as spelt out in the Perspective Plan Frame, even if impressive statistically, was not a sufficient index of the requisite transfer of purchasing power to the poverty sector. Consequently a plan to abolish poverty must be an attempt to reorganise the economy to produce the goods for mass consumption by the masses. A sustained plan to abolish poverty would thus involve identification of the poor in terms of occupation and locality, the human and material resources available in specific localities and formulating a production design at State level.

There was general acknowledgement that the Fourth Plan had not completely achieved its targets, in terms of production and re-distribution. The Fifth Plan approach paper spelt out the objectives of the removal of poverty and attainment of self reliance. In practical terms the problem was that of improving the conditions of the lowest three deciles during the period. In specific terms the projection variants were the disposable income of the lowest third to rise from Rs. 24 to Rs. 27 per month by 1979 and that of the highest third to increase from Rs. 93 to Rs. 100 per month, the income of all deciles collectively to move by 10.1 per cent each. A second variant is to raise the consumption expenditure from Rs. 24 to Rs. 37.1 per capita in the lowest group, which will involve a drop from Rs. 93 to Rs. 90 for the highest third. This would mean in effect a decline in expenditure standard for 200 million people. Both these variations, however, assume the same rate of growth.

A pertinent query raised was whether in the existing administrative system in the democratic frame-work, it was possible to evolve the requisite instruments of change and the needful innovative approach, in view of the stagnation of programmes such as the Community Development Projects. There is no doubt that new production and distribution patterns are essential if the projectives of the Fifth Plan is to be realised. Considerable ground has also to be covered in working out details of policy and institutional forms.

It was pointed out that in giving priority to the abolition of poverty, considerations like expenditure on Defence and industrial infrastructure for defence production should be reviewed and re-examined.

It was suggested that a more accurate estimate of the poverty line than that provided on the basis of the minimum calorie intake was needed for the precise appraisal of the numerical dimensions of the poor and for effective policy prescriptions. In this context it was mentioned that the calorie intake in Japan was 2,100. Another point raised was that cultivators of 2.5 acres of wet land cannot be considered as coming below the poverty line. There was need to include those just on the poverty line also in the statistical considerations and not merely those below.

If diversion of production to goods for mass consumption was an accepted prog-

ramme, a separate estimate of women in worker categories below the poverty line would lead to a more efficient organisation of the household sector in industry and make a greater impact on anti-poverty projects at village levels.

Changes in the pattern of production as outlined in the paper had not taken into account possible effects on existing industrial enterprises. Ideological concepts had also not been clearly postulated.

There was general commendation of the innovative and original approach expressed in the paper. The radical changes suggested in the paper, although differing from the Perspective Plan Frame, merited very serious consideration by the Planners in the State. The needful data required to set going such an innovative plan could be collected by the staff of the Planning Commission which commands the necessary expertise. A mobilisation of the popular will for evolving structures and institutions which could deal with the problem of poverty, on the basis outlined, at all levels was imperative for the success of the anti-poverty programme. Any constraint, be it a pre-occupation with ideology or cherished institutions, could not be allowed to stand in the way of a systematic problem-centred approach. The urgency for a concerted and direct frontal attack on poverty was today a general consensus in the Country. What is needed is further studies by researchers on actual and practical programmes and the creation of a climate for action.

FUNCTIONAL SCIENCE

Greetings :

To you, members of the International Conference on Functional Analysis and its Applications, which also marks the eleventh anniversary of this unique institution, the Institute of Mathematical Sciences, I wish to pass on a few of my thoughts on what I call functional science. For us in India, and for the most of us in third world, the major pressing problem is poverty. This is the fact of national development or national mal-development that concerns us now to which science must address itself and become functional, —almost to the point of making all other aspects of science seemingly subsidiary. I must confess to you that both as a development economist and a UNESCO man, this is a transformation in my own thinking and writing, which has been rather heavily concerned with the analysis and application of science to development. Now I am concerned with the application of science to mal-development, to the lifting of poverty.

The Substance of Poverty: Poverty for us in this Country and this State is known in its double dimension, as well known as the theory of numbers, or this Institute where we are meeting or its distinguished director to whom we owe this rendezvous. Poverty means that we have 220 million of our fellow countrymen who are living below the subsistence level of food, clothing, housing, drinking water, education and health forms—which would require that each of them spends no more than the equivalent of 20 U.S. cents a day to live at the subsistence level. They are actually averaging half of that. Poverty means that in this State of Tamil Nadu, 23 millions in our rural areas and 3 millions in our urban areas are in that situation, even though we have computed that if each of them could be enabled to spend no more than 14 U.S. cents a day, they could be lifted out of that sector. The other dimension of our poverty is that relatively this poverty group is getting poorer, while the rest is getting richer. This explosive fact of inequity is also known.

Science and Poverty: I said that we now know what our poverty is, and knowledge is the bed rock, the gadfly and the action base of science. And so the call to science and to scientists is not only to push forward the frontiers of knowledge in their class rooms and laboratories, in their research monographs and science symposia, it is to apply that knowledge and search for the further break throughs it is capable of, to deal with this intractable and inequitable problem of poverty. Over two decades ago, the Country's first prime minister and our beloved intellectual leader, Jawaharlal Nehru spotted this correlation between science and poverty when he declared "It is science alone that can solve the problem of hunger and poverty, of insanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste, of a rich country inhabited by starving people ... I do not see any way out of our vicious circle of poverty except by utilising the new sources of power which science has placed at our

* Extracts from the Presidential Address by Dr. Malcolm S. Adiseshiah at the International Conference on Functional Analysis and Its Applications at the Institute of Mathematical Sciences, Adyar, on 1st January 1973.

disposal." It was that link between science and poverty, which led him to accede to the request from the patron of this Institute, Mr. C. Subramaniam to support Alladi Ramakrishnan's dream, and to turn that dream into what has become this State's premier science institute and one of this Country's remarkable research instruments. It is that link which has led its president Dr. Nedunchezhian to give the Institute all the support and guidance it has needed. We have over the past two decades, however, forgotten the reason for our existence as a body of scientists, and apart from some imaginative and effective work in the field of the agricultural sciences, have done little to address ourselves to the clarion call of fighting poverty. The poor are still with us, and with the population explosion and our social structure their numbers and conditions have grown to intolerable levels—intolerable to what science stands for.

Science and Its Uses: We have also been warned by our present prime minister, Mrs. Indira Gandhi three days ago in Calcutta, of the uses and misuses of science. Reiterating her father's faith in science creating for us "a new order free from poverty, superstition and other social evils", our attention is called to the need to chalk out our own paths in this application of science and technology, as we are attempting something never attempted anywhere before, namely to develop a democratic society against a mass base of poverty. It would be so easy, she points out, if we simply followed other patterns to use science to maintain an outmoded social order. Science can also be used to maintain the inequitable status quo, can become the instrument for blocked social mobility. And all around us in our world are the danger signals of the misuse of science. The searing of the landscape by the refuse from mines, the fouling of the air by the smoke stacks of giant factories, the radio active fall-out and the increased radiation of the air, in the sea and underground, the rate at which we are all aspiring to attain the per capita level of destruction of the most industrialised countries, not to speak of the anguish of the Hiroshima millions, the insistent cry of the Nagasaki masses and the daily deaths of our Vietnam brothers and babies —these are some of our misuses of science. This I call anti-science for which the only antidote is both more science and more responsible scientists. I do not and cannot distinguish between science and scientists. It is against these many facets that the harnessing of science to our own ordered national goals is reiterated.

The Fifth Plan and Poverty: And so we—all of us—are called to return to the science–anti-poverty plea that the founder of the Country's planning and science flowering addressed to us. In the approach to the Fifth Plan which starts next year we declare: "the removal of poverty within a reasonable period is the key strategic aim of the Fifth Plan. The postulated rate and pattern of growth, the concern for freeing the development process of the Country from dependence on foreign aid, the emphasis on employment opportunities, the provision for a national programme of minimum needs, (a programme first formulated six months ago by the Institute's patron), and the envisaged public procurement and distribution system to ensure availability of essential goods to the poorer sections of the population at reasonably stable prices, have all been conceived as so many mutually reinforcing instruments, for providing the economy with the capacity and orientation to move firmly and towards doing away with abject mass poverty within a decade or so."

Is this an ambitions goal—doing away with abject mass poverty within a decade?

It seems so when we reflect that it took Europe (and North America) four centuries to achieve it. It took the Soviet Union four decades to achieve it. It is required of us to attain it in one decade. This progressive elimination of the time constraint in the anti-poverty battle in our world's history is due to the application of science and technology as the major weapon in that war. I would hope that our scientists, with blessings from you the international scientific community, will now turn to the execution of the 21 point science plan drawn up by the National Council of Science and Technology, which is aimed at translating the Fifth Plan strategy into a science action programme.

Resources Creation: I wish to concentrate on one point of that Plan – the creation of resources which, through its employment generating facility, its facilitation of the production of wage goods—the essential goods for people in the poverty sector, and its providing the frame work and infrastructure for accelerated industrial growth and agricultural diversification on which our final victory against poverty rests, is decisive and in which all scientists can participate.

First despite many limitations to this proposition, I am inclined to start with the common-sense position that a nation's resources are a measure of its potential welfare. Historical evidence is cited by economists to demonstrate that the rhythm of India's economic development from 1880 onwards was considerably retarded by the fact that the agricultural resource sector did not back up the lead given by its urban sector. The transport and communication explosion, the growth of urban agglomerations and the developing capital and entrepreneurial supply in the Country did not lead to growth because of the low supply elasticity of agricultural resources. While not being able to accept this analysis completely, I do believe that, on the basis of general historical evidence, a country's resource endowment influences the form and pace of its development. I will go even further and hazard an intuitive guess that resource planning, development and management, as part of its industrial and agricultural growth, is for us in India, at our present stage of development, the necessary condition for sustained growth (the other being the development of our human resources). Further for India the 'take-off' will be a consequence, not of sustained or uniform growth rates in all sectors, but of intensified efforts in certain strategic areas, and particularly in the leading resource sectors (which in my opinion are water, minerals and energy), sectors from which efforts will spread out to other related industrial and agricultural areas, where these resources will act as input items.

Second, current partial and ad hoc programmes of gathering, interpreting and analysing the facts and phenomena of our natural resources should be replaced by a comprehensive, planned, systematic and continuous survey and interpretation programme. Only such analytical investigations will reveal the fundamental problems of our natural resources development. We should not wait till we have exhausted all our surface water resources as we have done in this State, to begin a scientific survey of our ground water research. The result is dangerously unplanned exploitation of our underground water flows, because people want water now, not after the completion of the hydraulic survey. We should not wait till we have cut power supply to our industries and agriculture by 15 to 40 per cent to begin exploring our thermal resources or planning regional or national power grids. The establishment of a complete analytical inventory of all of our Country's resources is thus the first

major task awaiting its scientific and technical institutions and the stage for this is set for us in the national science plan.

The third imperative is the use of a balance sheet methodology, i.e. one which juxtaposes the supply side of natural resources as registered in inventories, and the demands for their use, taking into account the trends of population growth, production techniques, consumption patterns and internal and international trade indicators, as appropriate, the latter to be continually reviewed on a case-by-case basis. In addition, policy objectives such as self-sufficiency in certain sectors and self-reliance in all sectors, defence needs, industrialization goals, agricultural diversification and correcting spatial imbalances must also be taken into account. It is a complex and comprehensive task which is both inter and multi-disciplinary, and which should be made the joint responsibility of scientific institutions and university departments. However difficult it may be, it is nevertheless vitally necessary if we are to avoid the danger of considering the mere listing of resources as sufficient in itself to the process of growth and development. Such a resource picture of the Country demands special emphasis on comprehensive regional and area planning and development. A regional and area approach is an essential complement to the reconnaissance and survey of particular resources at the national level. Our lignite belongs to the Country but because it was not identified nor assessed as part of an area plan, we face some of the current difficulties.

A fourth area which requires attention is the relationship between the availability and utilization of resources and the long process they go through in being turned into consumer satisfaction—which is the end process in the poverty battle. Built into these studies and research should be the criteria of the optimum use of resources, both from the supply and demand side, involving public investment, a system of subsidies and other incentive measures. I should add that it is my hope that such studies on the welfare aspects of resource development and consumption will no longer be inhibited by out-dated concepts of ethical neutralism, scientific objectivity and universality (concepts on which I was nurtured in my student days). In its modern disguise, this posture is found in the sharp and absolute distinction drawn between endogenous and exogenous factors in development. Serious work on resource use, analysis and consumer satisfaction will be of help to the policy maker in the Country. It will provide him with a limited number of alternatives on the basis of which rational decisions can be made for successive incremental improvements in the welfare of the people. I am led by these considerations to suggest, in view of the fundamental importance of this field, that universities in India might give consideration to the development of resource analysis and interpretation as a sectoral discipline, within the broader studies involved in functional or phenomenological science.

Fifth, what of investments in natural resources development? The effective development of natural resources in this Country as in other developing countries, requires large amounts of capital and labour. In general, capital is perennially in short supply in our Countries. Further capital investments in resource projects are usually lumpy and require some imports of machinery and equipment from abroad, at least in the initial years. Further, the period of gestation of such investment is long and there is a scattering of benefits accruing from the investment beyond the group—public or private—

directly responsible for it. Hence it is important that capital which is in such short supply should be so invested as to bring maximum benefit in terms of the defined objective,—the objective of the removal of poverty through a real increase in the gross national product, involving a rise in living levels, resulting in an increase in economic and social security of the people.

Finally there is the question of the organization of research and investigation. In the organization of production and the economy generally, research enterprise now takes the place formerly reserved for entrepreneur-enterprise. For it is research which now embodies the traditional entrepreneurial qualities of invention, discovery and innovation working out new resource combinations, adjustments and allocations. The day of the entrepreneur—the grand master of strategy, the reformer and revolutionary, the predatory giant—who brought his superior knowledge, forcasting ability and talents into play, have given way to the era of systematically organized research and investigation, which involves methodic exploration into the known and the unknown, the imperfect and the imbalanced. For India where there is a scarcity of this unusual and outdated factor—the innovation—producing entrepreneur—, organized research must be the answer. The institutionalization of research, at the national and subnational levels, at the disciplinary, inter-disciplinary, multi-disciplinary and trans-disciplinary levels, is a direct consequence of this development and is one on which we have made a good start, a start which we must now turn to functional social use.

I realise that I have strayed from the main concern of the conference. I have done so because I believe that through your specialisation, you can contribute to what I call functional science, to the major issue facing us in this Country and the third world—the removal of poverty. That is the acid test for all of us scientists and intellectuals today. I pray that we meet that test.

BOOK REVIEW

Nutrition in Tamil Nadu by Rajammal P. Devadas

This monograph attempts to focus attention on the problem of nutrition in Tamil Nadu and emphasises the need for a time-bound programme of nutritional rehabilitation of some target groups of the population. The author has provided data which indicate the unsatisfactory state of current nutritional situation in Tamil Nadu. Among the thirteen States listed, Tamil Nadu has been shown to have the lowest mean per capita daily consumption of calories and proteins. The comparison between States is apparently based on published data on results of nutritional surveys in different States. These data may not be strictly comparable since the samples surveyed in different States were not always similar. Even so, it is most likely that the conclusion that Tamil Nadu is among the States in the country with relatively low consumption of calories and proteins is true.

As it may be expected, this chronic state of undernutrition has far-reaching effects on the health of the population. The author has provided data showing the high incidence of protein-calorie malnutrition, Vitamin A deficiency and morbidity among children in the earlier age groups of 1 to 5 years. An interesting feature of the analysis of calorie and nutrient intake of different age groups of children (Table-6) is that in the age group 0-2.5 years, it is the deficit of calories which is of major concern and protein intakes appear to nearly correspond to recommended allowance. At higher age groups (up to 21 years), the calorie gap persists with added deficit of proteins as well.

The monograph deals with current efforts to combat malnutrition and to evolve a time-bound strategy for nutritional rehabilitation of pre-school children, school age children, pregnant and nursing women. In order to implement this ambitious programme, the author recommends the establishment of a full-fledged nutrition department at State level, and a generous financial allocation.

In the discussion on the organisation, the author does not indicate how the existing set-up of a central nutrition bureau at State level (one Assistant Director of Public Health – Nutrition – and two regional nutrition officers with ancillary staff) and the State Unit of the National Nutrition Monitoring Bureau are to be involved. The set up suggested by the author is no doubt comprehensive. A system is, however, only as good as those operating it. More important is to ensure the quality and calibre of those operating the nutrition programmes.

The monograph appears to place greater emphasis on supplementary feeding programmes for target groups than on other means of nutritional uplift. In this context, it must be emphasised that feeding programmes by themselves cannot bring about any significant transformation in the nutritional status of the community. Feeding programmes have to be integrated with other health and welfare programmes to form a composite package programme. Indeed, experience elsewhere indicates that enduring improvement of nutritiona status of population is often achieve through improvement of environmenta sanitation, control of infections an

nutrition education than through ad-hoc supplementary feeding programmes operating in isolation.

The programme for nutrition education for various categories is indeed note-worthy. Nutrition education at various levels is perhaps the only way to cultivate the right type of food habits and motivate a judicious expenditure of the food budget within the economic framework of the different segments of the population.

The monograph cites a number of references in the text, however, the list of such references in bibliography have not been properly checked and verified. A list of references for verification is herewith appended.

In conclusion, the author who has had considerable first hand experience and knowledge of nutritional problems in the field, must be complimented on this useful monograph.

p. 40. ref. 32 relates to haematoposis, but under bibliography the reference cited to Food. The Year Book of Agriculture 1959.

p. 41. ref. 33 refers to beri-beri, under bibliography, reference is Ritchie, Jean A.S. "Lear Better Nutrition" F.A.O., Rc 1967.

p. 43. ref. 32 (is it 22)
p. 44. ref. 32 („)
p. 45. ref. 32 („)
p. 46. ref. 32 (")
p. 46. ref. 33 (?)
p. 46. ref. 35 (reg. maternal mortalit in India due to anaemia)
p. 53. ref. 32 (?)
p. 54. ref. 38 (?)
p. 82. ref. 39.
p. 87. ref. (2) reg. P.F.A.
p. 87. ref. 3.
p. 90. ref. (4)
p. 91. ref. (5)
p. 92. ref. (4)
p. 93. ref. (4)
p. 94. ref. (6)
p. 95. ref. (7)
p. 96. ref. (8)
p. 97. ref. (9)

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